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Abstract
This document provides the results of the Phase I Final Status Survey of Building 4059 at the Santa Susana Field Laboratory. All measurements confirm that the facility meets the release limits approved by the Department of Energy and the State of California Department of Health Services. Accordingly, the Phase I portion of the facility is suitable for release for unrestricted use.

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EXECUTIVE SUMMARY

On June 6, 1999, a MARSSIM Final Status Survey was completed in Building 4059 confirming that the Phase I portion of the facility meets release limits approved by the Department of Energy, and the Department of Health Services. Accordingly, the Phase I portion of the facility is suitable for release for unrestricted use.

The Phase I portion of the facility, the upper structure of the building, was not made radioactive by testing programs, and is considered to be non-radioactive. The Phase II portion of the facility is considered radioactive material. All radioactive material will be removed and packaged after the Phase I portion of the facility has been demolished and removed. The two phased approach to the release of the Building 4059 site, described in Section 2.2, is safest for the worker and most cost effective for the demolition and removal. This approach was the best path to our goal of no significant impact on public health and safety and a site release for unrestricted use.

During 1987, a comprehensive decontamination and decommissioning effort was initiated in the former SNAP Testing Facility, Building 4059. After D&D efforts, a comprehensive Final Status Survey of the facility concluded in June 1999. The Final Status Survey classified the building into three types of areas: Class I survey units were those rooms/areas that had been contaminated above the derived concentration guideline limits (DCGLs) during prior remediation operations. This area included all the basement areas. Class II survey units included those areas where slight contamination may have existed but at lower levels than the weighted average of the derived concentration guideline limits ($DCGL_W$). Class III survey units included areas where no contamination existed during the building's history.

Class 1, comprised of the basement and Vacuum Equipment Room (VER). Class II, comprised of the entire High Bay, east and west stairwells, and auxiliary storage Building 4459. Class III, comprised of the office area, HVAC Room, Electrical Room, Mechanical Room, hallways, and Bathrooms. All measurements were tested statistically for compliance within the regulatory acceptable derived concentration guideline limits (DCGLs), and ambient exposure rates.

In all Class I, II and III areas, the highest quantitative total beta measurement found was 783 dpm/100cm^2 which is well below the 5,000 dpm/100cm^2 limit for fixed contamination. The highest removable alpha contamination found was 5.4 dpm/100cm^2, and the highest removable beta found was 54 dpm/100cm^2, again significantly below the 1,000 dpm/100cm^2 removable contamination limit. The highest background subtracted ambient gamma measurement was 4 μR/hr. A 100% direct qualitative frisk of all floors, walls and ceilings revealed all areas had no detectable activity.

Graphs (Refer to Appendix B, C, and D) of the surface contamination results were evenly distributed, and the results were less than the release limits. All tests for surface contamination confirmed that the Phase I portion of the Building 4059 is suitable for release without radiological restrictions.

1.0 INTRODUCTION

The Phase I Final Status Survey for Building 4059 followed protocols of the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), Reference 6.1. The format of this plan followed the format suggested in Appendix A of Reference 6.1.

The procedure provided details on the MARSSIM methods used for the Phase I Final Status Survey. A combination of MARSSIM (see Reference 6.1) protocols and standard Rocketdyne survey techniques were employed. Each room was mapped with established Class I, II and III survey units. Class I survey units was those rooms/areas that had been contaminated above the $DCGL_W$ limits during prior remediation operations. This area will include all the basement areas. Class II survey units included those areas where slight contamination may have existed but at lower levels than the $DCGL_W$. Class III survey units included areas where no contamination existed during the building's history.

Only activation products (Co-60 and Eu-152/154) have been observed in Building 4059, and no alpha emitters have ever been detected, therefore only beta scans and measurements were performed. A 100% surface beta scan of Class I surfaces was conducted. A 20% surface beta scan of Class II surfaces (including upper walls above 2 meters and ceilings) was conducted. The number of stationary beta measurements in each survey unit was based on the statistical models recommended in MARSSIM. One-minute total and removable beta surface contamination measurements were performed. The beta $DCGL_W$ was 5,000 dpm/100cm^2 total beta and 1,000 dpm/100cm^2 removable beta.

Since MARSSIM does not explicitly cover volumetric activation, Rocketdyne also took 1-minute gamma exposure measurements at 1-meter and at floor surfaces. These were taken at the same floor locations as the stationary beta contamination measurements. Since surface contamination measurements were background subtracted based on daily instrument performance checks, the resulting data set was interpreted and analyzed using the Sign Test method as described in MARSSIM.

2.0 FACILITY HISTORY

2.1 Background

Building 4059 (see Figure 1), located in Area IV at Rocketdyne's SSFL, has a large below-grade test vault with two reactor test cells and below grade support rooms. It was used in the late 1960s for ground-testing the Space Nuclear Auxiliary Power (SNAP) prototype reactor, S8DR. During the early 1970s, following successful completion of the ground tests, the reactor and the north reactor test cell portion of the liquid metal heat transfer circuits was removed. All reactor systems were removed intact and no loose, surface contamination was present after the reactor systems were removed. The facility was then placed under a maintenance and surveillance regime while waiting for future decontamination and decommissioning (D&D).

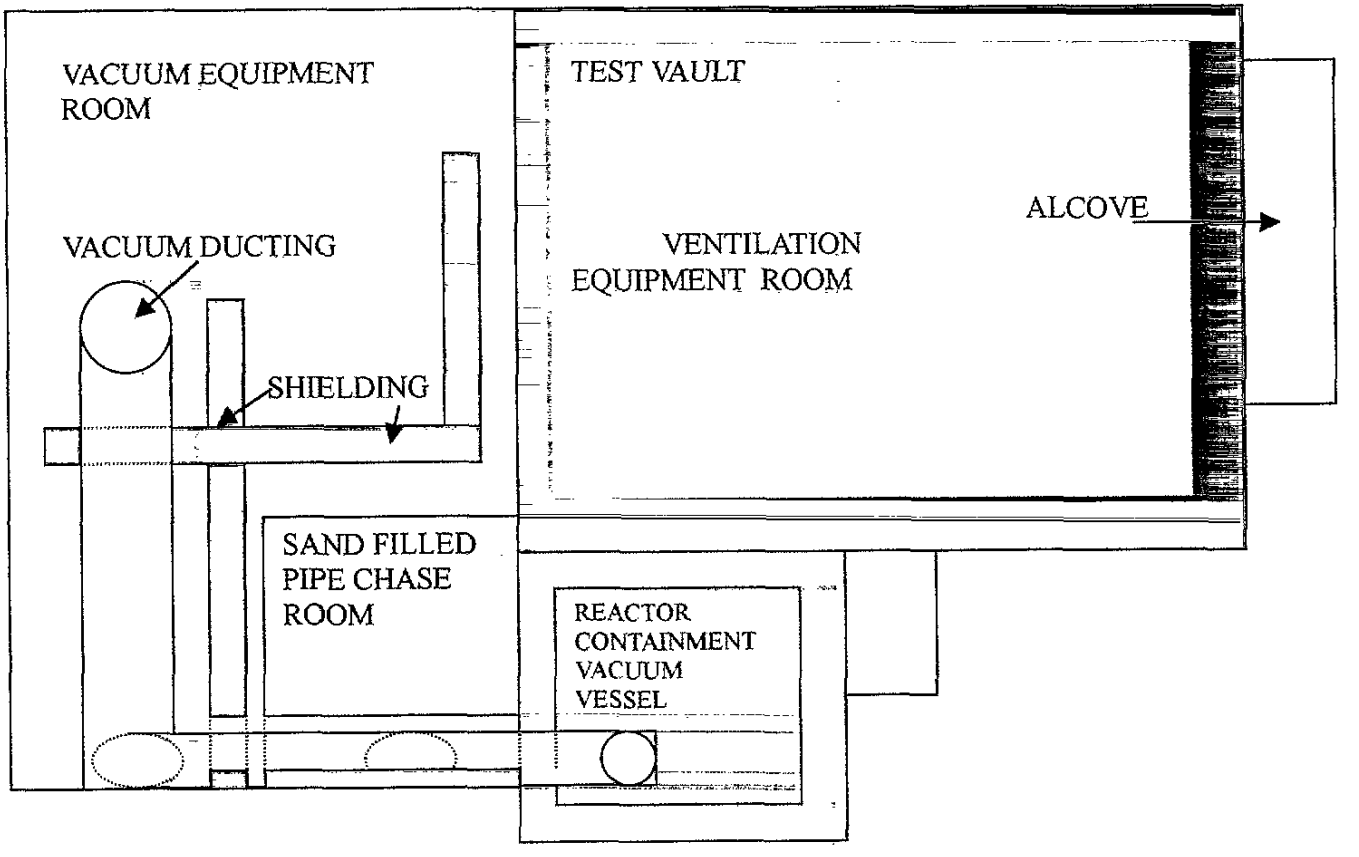


FIGURE 1: BUILDING 4059 OVERVIEW

DOE funded the D&D program to be initiated in 1987. The overall objectives of the Building 4059 Remediation Program performed by Rocketdyne for the Department of Energy (DOE) were threefold:

- Prevent radiological contamination of the environment,
- Remove all radiological activated material above Federal and State of California designated unrestricted release limits from within the building and its structure, and
- Restore the site to conditions suitable for release without radiological restrictions in compliance with DOE guidelines, the Formerly Used Site Remedial Action Program (FUSRAP) and Surplus Facilities Management Program (SFMP).

The most highly activated sources of radioactive materials were removed in the first stages of the program. The Pipe Chase Room was emptied of sand and the 5-foot diameter vacuum duct was sectioned and packaged for disposal. The large vacuum vessel was remotely sectioned and removed and the entire north test cell shielding concrete was broken up, packaged and shipped to disposal. Steel liners were removed from both test cells, leaving only the neutron-activated materials within the test facility walls, ceilings and floors; primarily Europium-152 (concrete aggregate) and Cobalt-60 (rebar and facility wall liner material).

During fiscal year 1999, the facility was cleaned of low levels of surface contamination resulting from D&D activities, primarily from the size reduction and packaging of activated materials. In addition, the facility structural materials were sampled by core drilling near the test vaults to determine the extent or boundary of activated materials above unrestricted release criteria. The areas outside this boundary would only be subject to surface contamination and could therefore be released for unrestricted use by cleaning and subsequent radiological verification survey of the surfaces.

2.2 Preferred Approach to Facility Demolition and Site Release

Activated structural materials at levels higher than releasable limits remain in the support columns and walls immediately adjacent to the test cell at 50 feet below grade. An assessment by a structural engineer has concluded that any further removal of structural materials in the test vault area will compromise the structural integrity of the building and endanger personnel working below grade. Removal of the activated structural materials prior to removal of rest of the massive facility structure above these activated materials would require designing and constructing alternate structural supports for the facility walls, etc. Choosing this approach would extend the schedule and increase costs unnecessarily.

A viable, reasonable and safer alternative was to perform the Building 4059 site release in two phases. In Phase I, the above grade building and the below grade portions (excluding the activated concrete in the north test vault) was decontaminated and surveyed, this portion of the building will then be released for demolition, and demolished.

In Phase II of the Building 4059 project, the remaining activated concrete in the test vault in the basement will be removed, packaged and disposed of as radioactive waste. The remaining excavation will then be sampled, surveyed, cleaned if necessary, and released.

This is a similar approach to that used previously at Building 4064. The facility building was first surveyed and released, and then demolished and sent to off site landfill disposal. In the second phase of the Building 4064 project, after all the structures had been removed, the site grounds were final surveyed and released. The recommended sequence for Building 4059 is outlined below and the physical division of the two phases is described as follows:

PHASE I

1. Characterize and define the area (volume) of the facility to be packaged and sent to disposal as radioactive waste by core sampling the concrete and steel liner and performing analyses to identify "clean" volume from activated material.

2. Clean all other areas of the facility with the purpose of preparing for final survey and release of these areas containing no internal activation.

3. Perform final release survey of non-activated above and below grade areas to be removed as non-radiological materials (Phase I).

DOE (Reference 6.8) and DHS (Reference 6.9) have approved the two-Phase approach (see Reference 6.2). Step 1 above has been completed and documented. Step 2 and 3 above have been completed. Step 3 is documented in this report.

4. Perform verification surveys by ORISE and DHS of the Phase I portion of the facility.

5. Receive DOE release and DHS concurrence for Phase I.

6. Implement demolition contractor provided plan for physical barriers to prevent "released" demolition debris from entering areas of the facility with remaining activated material.

7. Perform demolition and debris removal of "clean" portion of the facility. (Phase I completed).

PHASE II

8. Perform demolition of activated facility structural materials (Phase II portion of facility) and package for radioactive waste disposal.

9. Perform final release survey of excavation.

10. Perform verification surveys of excavation by ORISE and DHS.

11. Receive DOE release and DHS concurrence.

12. Backfill excavation and restore site.

3.0 SURVEY DESIGN

3.1 Identification of Radionuclides of Concern

Surveys during remediation confirmed that activation products, primarily Co-60, are present. Cobalt-60 is found in the facility walls, liners, and rebar. In addition trace Eu-152, and Eu-154 has been found in the concrete aggregate.

3.2 Derived Concentration Guideline Limits (DCGLw).

The objective of this survey was to demonstrate that residual surface contamination, in excess of the release criterion, is not present at this site. The DCGLw for Co-60 used for evaluating survey results is 5000 dpm/100cm^2 fixed and 1000 dpm/100cm^2 removable for surface contamination of structures. Concrete and steel core surfaces taken in the Building 4059 basement indicate that volumetric activation of building materials in the Phase I portion of the building survey are negligible to zero (see Reference 6.2).

3.3 Classification of Areas Based on Contamination Potential.

The facility consists of one building situated on approximately 1.2 acres of land. The building subsurface area is a concrete block structure on a poured concrete slab with a poured concrete ceiling. The surface structure, with the exception of the high bay, is a single story, with numerous rooms, partitioned with drywall and a corrugated steel roof. The high bay is constructed of concrete and corrugated steel. A chain-link fence surrounds the facility. The subsurface structure is divided into numerous rooms made of concrete. The outside area is covered with asphalt, and the northwest end was used as the employee parking lot, and truck access to the shipping/receiving areas. Previous surveys were reviewed and the results were determined to be appropriate for planning the Final Status Survey.

3.3.1 Class I

Class I survey units were those rooms and areas having known contamination above DCGL's during prior remediation operations which included all basement areas of Building 4059. These included areas having known **>5000 dpm/100cm^2** fixed contamination and **>1000 dpm/100cm^2** removable contamination.

3.3.2 Class II

Class II survey units included those areas where contamination existed below DCGLs during remedial operations. Those areas included the High Bay, Stairwells, and Building 4459. These included areas between **1000 and 5000 dpm/100cm^2** fixed contamination; and between **200 and 1000 dpm/100cm^2** removable contamination.

3.3.3 Class III

Class III survey units included areas where negligible or no contamination existed during Building 4059's history. Class III areas included the office areas, Control Room, Equipment Room, Electrical Room, Noble Gas Room, and all other areas above ground inside building 4059 and outside roof area. These included areas **<1000 dpm/100cm^2** fixed contamination; and **<200 dpm/100cm^2** removable contamination.

3.4 Identification of Class I, II and III Areas

3.4.1 Based on the results of other decommissioning surveys at the site, and the operating history, the following Class I, II, and III areas were used to design the Final Status Survey. All of the Class I and Class II interior surface areas were concrete. Most Class III areas were drywall and corrugated steel. The Figure 2 Plot Plan used for Building 4059 is shown below. The entire basement area was designated Class I, with the exception of the reactor pits which will be addressed in the Phase II operations, and the stairwells which were Class II.

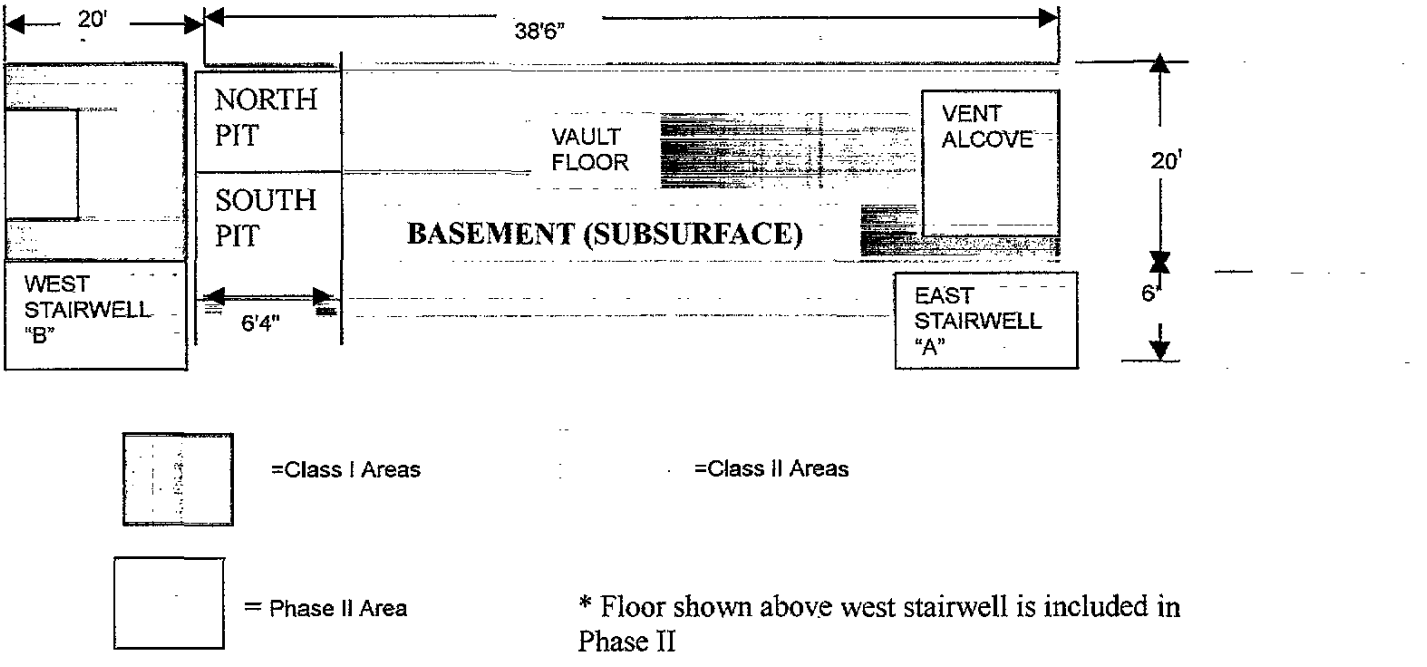


FIGURE 2: BUILDING 4059 CLASS I FLOOR PLAN (BASEMENT LEVEL)

3.4.2 Figure 3 shows the Class II and III areas. Only the High Bay and stairwells were Class II.

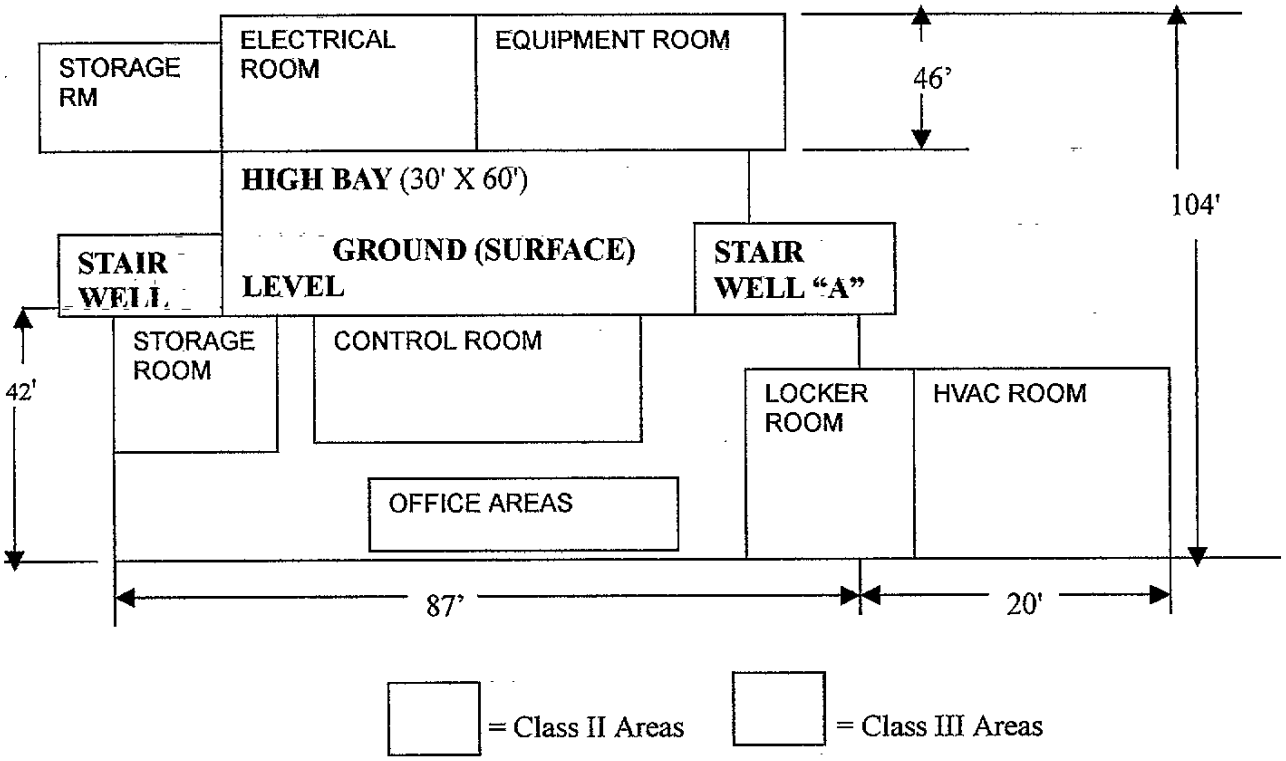


FIGURE 3: CLASS II AND III FLOOR PLAN (GROUND FLOOR LEVEL)

3.4.3 Table 1 of the MARSSIM Manual, Roadmap-6, limited the survey unit areas as follows:

CLASSIFICATION	MAX SURVEY UNIT AREA
CLASS I	100 m^2
CLASS II	1000 m^2
CLASS III	UNLIMITED

TABLE 1: AREA CLASSIFICATION

3.5 Decision Objectives

The decision objectives were as follows:

- The objective of this survey was to achieve release for unrestricted use.
- The null hypothesis (H_0) for each survey unit was the residual radioactivity concentrations exceeding the release criterion. The null hypothesis for all survey units must be rejected for the site to be released for unrestricted use.
- Acceptable decision error probabilities were alpha [α *regulators risk* = 0.05 and beta [β *users risk* = 0.05; where α is defined as the probability that the null hypothesis was rejected when in fact it is true, such as when "a contaminated site is declared clean" and β is defined as the probability that the null hypothesis was accepted when in fact it is false or when "a clean site is declared contaminated".
- The Derived Concentration Guideline ($DCGL_W$) for the primary contaminant of concern was 5000 dpm/100cm^2 of Co-60.
- The Lower Bound of the Gray Area (LBGR) was one half of the $DCGL_W$ or 2500 dpm/100cm^2 surface contamination.
- The regulator's risk (α) was established at the $DCGL_W$.
- The user's (Rocketdyne) risk β was established at the LBGR.

3.5.1 Power Chart

The Gray Region of the Power Chart extended from 2500 to 5000 dpm/100cm^2 for total beta contamination. The survey was designed for the statistical test to have 95% power to decide a survey unit containing less than 2500 dpm/100cm^2 met the release criteria. For the same test, a survey unit containing over 5000 dpm/100cm^2 had less than a 5% probability of being released.

3.6 Number of Survey Units

Survey Units were labeled alpha-numerically. For structural surfaces consisting of beams, pipes, conduits, and other surfaces that were not accessible to large surface measurements, a section of structural run was randomly selected within the survey unit sample point for surveying.

The **Class I** area (911 m^2) will consist of **10 survey units** each of ≤100 m^2.

The **Class II** areas (1900 m^2) will consist of **3 survey units** each of ≤1000 m^2

The **Class III** areas (3100 m^2) will consist of **1 survey unit** of unlimited dimensions.

3.7 Determination of Sample Point Numbers

Twenty Sample points were required per Survey Unit.

The shift Δ used was the $DCGL_w$ minus the LBGR. In other words, the shift is the width of the Gray Region. σ was the expected standard deviation of the measurements of the survey unit. Based on prior surveys of Building 4059, the σ for total contamination used was 829 dpm/100cm^2.

The relative shift was therefore: $\frac{5000 - 2500}{829} = 3$

From Table 5.5 of Reference 6.1, the number of samples required for a relative shift of 3 and $\alpha = \beta = 0.05$ is 14 in each survey unit. A conservative factor of 40% was applied, bringing the total to 20 sample points.

Twenty sample points was required per Survey Unit

3.7.1 Total Number of Sample Points

The total number of sample points taken in each Class area were:

- Class I: 20 data points per survey unit. (10 survey units * 20 points = 200 points).
- Class II: 20 data points per survey unit (3 survey units * 20 points = 60 points).
- Class III: 20 data points per survey unit (1 survey unit * 20 points = 20 points).

3.7.2 Survey Unit Area

Table 2 depicts the individual Class areas that were divided up into individual Survey Units to maintain the area limitations of Table 1 above.

CLASS	SURVEY UNIT	LOCATION	TOTAL AREA per Survey Unit	SAMPLE GRID AREA	GRID SPACING
Class I	SU1	Alcove	87.8 m^2	4.39 m^2	2.09 meters
Class I	SU2	East Wall	83.2 m^2	4.16 m^2	2.03 meters
Class I	SU3	Floor	65 m^2	3.25 m^2	1.80 meters
Class I	SU4	North Wall	98.4 m^2	4.92 m^2	2.21 meters
Class I	SU5	West Wall	83.2 m^2	4.16 m^2	2.03 meters
Class I	SU6	South Wall	98.4 m^2	4.92 m^2	2.21 meters
Class I	SU7	Ceiling	98.4 m^2	4.92 m^2	2.21 meters
Class I	SU8	VER	99 m^2	4.95 m^2	2.22 meters
Class I	SU9	VER	99.4 m^2	4.97 m^2	2.22 meters
Class I	SU10	VER	98.1 m^2	4.90 m^2	2.21 meters
Class II	SU11	High Bay	868.5 m^2	43.4 m^2	6.58 meters
Class II	SU12A	East Stairwell	220.4 m^2	11.0 m^2	3.31 meters
Class II	SU12B	West Stairwell	166.3 m^2	8.3 m^2	2.88 meters
Class II	SU13	Building 459	645 m^2	32.2 m^2	5.67 meters
Class III	SU14	All other areas	3100 m^2	Random	Random

TABLE 2: SURVEY UNIT AREAS

Two random numbers between zero and one were generated to locate the random starting point for the survey units. Using Table I.6 of MARSSIM, Appendix I, 0.296926 and 0.222167 were selected. They were calculated in Table 3 as follows:

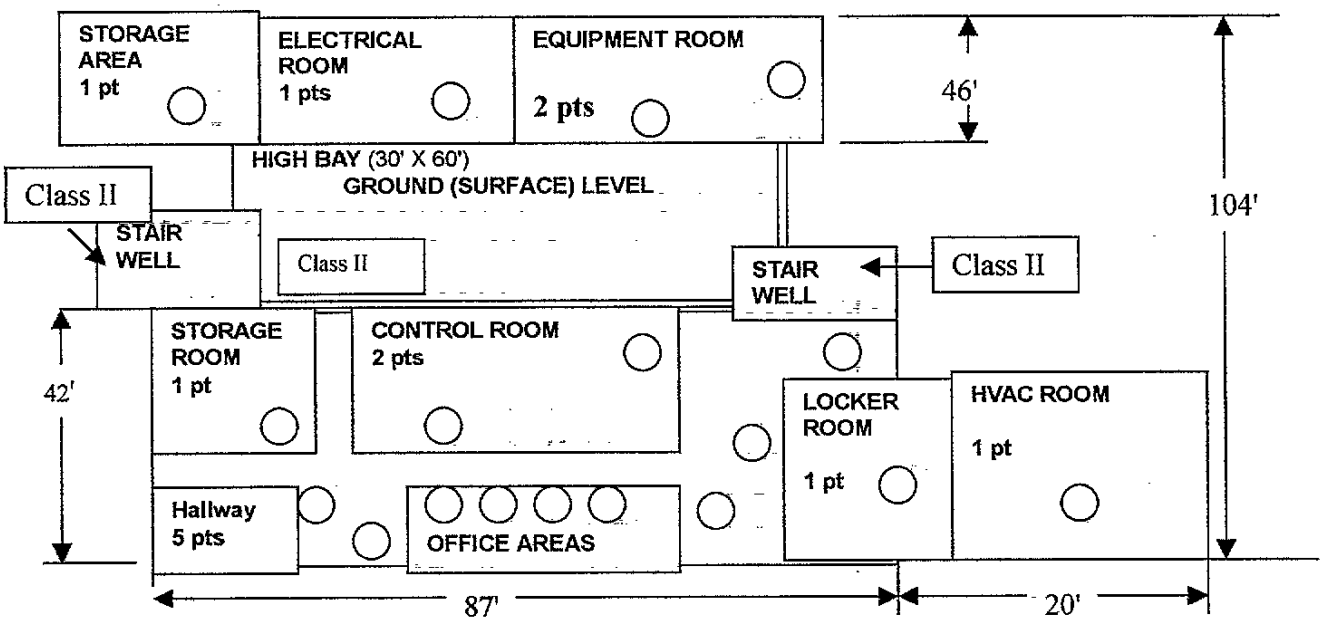
CLASS	SURVEY UNIT	X * LENGTH	Y * WIDTH OR HEIGHT	ORIGIN CORNER	STARTING POINT COORDINATES
I	1	9.44 * 0.296926	9.29 * 0.222167	Southwest	X = 2.74, Y = 2.05
I	2	9.75 * 0.296926	8.53 * 0.222167	Lower Left	X = 2.83, Y = 1.88
I	3	8.53 * 0.296926	7.62 * 0.222167	Southwest	X = 2.47, Y = 1.68
I	4	11.73 * 0.296926	8.38 * 0.222167	Lower Left	X = 3.4, Y = 1.84
I	5	9.75 * 0.296926	8.53 * 0.222167	Lower Left	X = 2.83, Y = 1.88
I	6	11.73 * 0.296926	8.38 * 0.222167	Lower Left	X = 3.4, Y = 1.84
I	7	11.73 * 0.296926	8.38 * 0.222167	Southwest	X = 3.4, Y = 1.84
I	8	15.85 * 0.296926	6.24 * 0.222167	Lower Left	X = 4.6, Y = 1.37
I	9	16.21 * 0.296926	6.09 * 0.222167	Lower Left	X = 4.6, Y = 1.37
I	10	10.05 * 0.296926	9.75 * 0.222167	Lower Left	X = 2.92, Y = 2.15
II	11	31.5 * 0.296926	27.5 * 0.222167	Southwest	X = 7.98, Y = 5.5
II	12A	20 * 0.296926	11 * 0.222167	Southwest	X = 5.8, Y = 2.42
II	12B	17.5 * 0.296926	9.5 * 0.222167	Southwest	X = 5.8, Y = 2.09
II	13	26.5 * 0.296926	24.5 * 0.222167	Southwest	X = 7.69, Y = 5.39
III	14	Random	Random	Southwest	Random

TABLE 3: ESTABLISHING RANDOM STARTING POINTS

3.8 Survey Unit Grids and Spacing

The Survey Units' surface area, number of sample points, random starting points, and the distance apart were used to determine the following sample point locations. Random starting points shown in Table 3, and grid spacing shown in Table 2 were attempted in the field. However, because of structural limitations, a uniform spacing grid was difficult to apply. To achieve as close as possible the appropriate spacing, more points were sampled than required in some Class I and Class II survey units. Refer to Appendix A for actual survey sampling points.

Class III points were taken in individual rooms and outside areas.



****Plus 2 pts on roof area**

= Class II areas = Class III

FIGURE 4: CLASS III SAMPLE POINTS

3.9 Survey Instrumentation and Survey Techniques

The following equipment and instrumentation were required to conduct the Final Status Survey. Substitutions were allowed where the equipment performance is equivalent to the instrument listed.

- Ludlum Model 22-21-ESG Scalar/Rate meter
- Tennelec Alpha/Beta Counting System
- Ludlum Model 44-9 Thin-Window Pancake GM Probe
- Ludlum Model 44-2 High-Energy Gamma Probe
- Canberra Series 100 MCA System with High-Purity Germanium/Lithium Detector
- Ludlum Model 12 Count rate Meter
- Cesium 137 check source
- Survey detector 1 meter tripod
- Survey detector balance boom
- Nuclear Power Outfitters (NPO) 1¾-inch cloth smear discs, or equivalent
- Miscellaneous non-hazardous operating supplies

3.9.1 Calibration

All portable survey instruments were serviced and calibrated on a quarterly basis. Daily checks and calibrations were performed on all instrumentation (when used) to determine acceptable performance. Daily checks and calibration data was entered on the appropriate Instrument Qualification Sheet (IQS). Reference 6.3 provided additional methods and procedures for daily instrument qualification checks

3.9.2 Representative Reference Background Areas

For the purposes of evaluating gross beta activity on structural surfaces, a building of similar construction, Building 013, was identified on the property immediately east of the site. This building served as a reference for surface activity measurements. Two reference areas: one for concrete surfaces and one for drywall surfaces were required.

3.9.3 Scan MDC

3.9.3.1 Required Scan MDC

Scanning between the grid samples was performed to ensure that small areas of contamination did not remain undetected. From Table 5.7 of MARSSIM, page 5-37, the building Area Dose Factor for Co-60 and a grid area of $5m^2$ was 3.0. Therefore the elevated measurement concentration $DCGL_{EMC}$ used was...

$DCGL_{EMC} = DCGL_W \times$ Area Factor = 5000 x 3 = 15,000 dpm/100cm^2

The required Scan MDC was therefore...

Scan MDC (required) = $DCGL_{EMC}$ = **15,000 dpm/100cm^2**

3.9.3.2 Actual Scan MDC

Measurements of the beta surface contamination were made with surface scans performed with a thin-window pancake Geiger-Mueller tube moving at approximately 1 in/sec. Actual scan MDC for this technique was calculated below following the procedure outlined in pages 6-41, 6-43 of Reference 6.1, and equation 6-10 of MARSSIM.

- Minimum Detectable Count Rate (MDCR) Table 6.6 = 60 cpm
- Instrument efficiency = $\varepsilon_t = 0.12$
- Surface efficiency = $\varepsilon_s = 0.9$
- Surveyor efficiency = 0.5
- Probe area = 20 cm^2

- Scan MDC = $$\frac{6.0}{(\sqrt{0.5})\,(0.12)\,(0.9)\,(20/100)} = 3{,}928 \text{ dpm/100cm2}$$

Scan MDC (actual) = 3928 **dpm/100cm^2**

Since the actual scan MDC of 3,928 dpm/100cm^2 was less than the required 15,000 dpm/100cm^2 scan MDC, the scanning technique was adequate for detecting hot spots above $DCGL_{EMC}$ between the sample locations. Therefore no adjustment to the number of samples to account for elevated activity was necessary.

4.0 SURVEY RESULTS

4.1 Measurement Types

Scanning was performed to locate small areas of elevated concentrations of residual radioactivity to determine if they met the release criteria. Direct, qualitative scans were conducted for beta-gamma contamination followed by a cumulative counts and smear surveys of interior surfaces. The percentage of survey and number of measurements conducted for each survey unit is shown in Table 4.

	QUALITATIVE (SCAN TOTAL)		QUANTITATIVE (TOTAL)		REMOVABLE		AMBIENT
SURVEY UNIT	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	GAMMA
1	NM	100%	NM	20 PTS	20 PTS	20 PTS	5 PTS
2	NM	100%	NM	20 PTS	20 PTS	20 PTS	NM
3	NM	100%	NM	20 PTS	20 PTS	20 PTS	20 PTS
4	NM	100%	NM	29 PTS	29 PTS	29 PTS	NM
5	NM	100%	NM	20 PTS	20 PTS	20 PTS	NM
6	NM	100%	NM	28 PTS	28 PTS	28 PTS	NM
7	NM	100%	NM	21 PTS	21 PTS	21 PTS	NM
8	NM	100%	NM	20 PTS	20 PTS	20 PTS	NM
9	NM	100%	NM	20 PTS	20 PTS	20 PTS	NM
10	NM	100%	NM	20 PTS	20PTS	20 PTS	6 PTS
11	NM	100%	NM	20 PTS	20 PTS	20 PTS	4 PTS
12	NM	100%	NM	34 PTS	34 PTS	34 PTS	13 PTS
13	NM	20%	NM	20 PTS	20 PTS	20 PTS	4 PTS
14	NM	20%	NM	20 PTS	20 PTS	20 PTS	20PTS

NM = not measured

TABLE 4: SURFACE AREA SURVEYED

4.2 Class I Survey Results

SURVEY UNIT 1: For the Alcove, the survey data results demonstrated the highest quantitative total beta measurement was 696 dpm/100cm^2 and the highest removable beta contamination was 28.5 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. The highest net gamma level was 2.75 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity (Refer to Appendix B)

SURVEY UNIT 2: For the east wall of the basement area, the survey data results demonstrated the highest quantitative total beta measurement was 104.4 dpm/100cm^2 and the highest removable beta contamination was 19.9 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 3: For the floor of the basement area, the survey data results demonstrated the highest quantitative total beta measurement was 184.9 dpm/100cm^2 and the highest removable beta contamination was 22.8 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. The highest net gamma level was 3.92 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 4: For the north wall of the basement area, the survey data results demonstrated the highest quantitative total beta measurement was 293.6 dpm/100cm^2 and the highest removable beta contamination was 31.4 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 5: For the west wall of the basement area, the survey data results demonstrated the highest quantitative total beta measurement was 171.8 dpm/100cm^2 and the highest removable beta contamination was 16.59 dpm/100cm^2. The highest removable alpha contamination was 5.4 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 6: For the south wall of the basement area, the survey data results demonstrated the highest quantitative total beta measurement was 87 dpm/100cm^2 and the highest removable beta contamination was 22.3 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 7: For the basement area ceiling, the survey data results demonstrated the highest quantitative total beta measurement was 217.5 dpm/100cm^2 and the highest removable beta contamination was 39.6 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 8: For the vacuum equipment area (VER) ceiling, chimney and west wall, the survey data results demonstrated the highest quantitative total beta measurement was 330.6 dpm/100cm^2 and the highest removable beta contamination was 51.2 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity (Refer to Appendix B)

SURVEY UNIT 9: For the vacuum equipment area (VER) north and south walls, the survey data results demonstrated the highest quantitative total beta measurement was 652.5 dpm/100cm^2 and the highest removable beta contamination was 54 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

SURVEY UNIT 10: For the vacuum equipment area (VER) east wall and floor, the survey data results demonstrated the highest quantitative total beta measurement was 226.2 dpm/100cm^2 and the highest removable beta contamination was 42.8 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. The highest net gamma level was 3.2 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix B)

4.3 Class II Areas

SURVEY UNIT 11: For the entire Highbay, the survey data results demonstrated the highest quantitative total beta measurement was 113.1 dpm/100cm^2 and the highest removable beta contamination was 25.4 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. The highest net gamma level was 2.6 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix C)

SURVEY UNIT 12A&B: For both the east and the west stairwells, the survey data results demonstrated the highest quantitative total beta measurement was 348 dpm/100cm^2 and the highest removable beta contamination was 31.4 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. The highest net gamma level was 4 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix C)

SURVEY UNIT 13: For auxiliary storage Building 4459, the survey data results demonstrated the highest quantitative total beta measurement was 739.5 dpm/100cm^2 and the highest removable beta contamination was 25.6 dpm/100cm^2. The highest removable alpha contamination was 2.6 dpm/100cm^2. The highest net gamma level was 4 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix C)

4.4 Class III Areas

SURVEY UNIT 14: For all other areas including office area, HVAC room, Electrical Room, Mechanical Room, hallways and Bathrooms, the survey data results demonstrated the highest quantitative total beta measurement was 783 dpm/100cm^2 and the highest removable beta contamination was 19.7 dpm/100cm^2. The highest removable alpha contamination was 5.4 dpm/100cm^2. The highest net gamma level was 1 μR/hr above the inside background levels of the building. Qualitative measurements taken for all one hundred percent (100%) of the survey grids in the affected area indicated no detectable activity. (Refer to Appendix D)

4.5 Sign Test

For each survey unit, both total and removable measured contamination was well below the $DCLG_W$. Therefore implementation of the sign test (shown in Appedices B,C, and D) produces a postive sign for each (100%) measured value in every survey unit. Thus, the number of positive values in each survey must, by definition, always exceeds the critical value in Table I.3 page I-4 of Reference 6.1.

Table 5 summarizes the Survey Unit results for all areas of Building 4059.

SURVEY UNIT	MAXIMUM QUANITATIVE TOTAL (DPM/100 CM^2)	MAXIMUM REMOVABLE (DPM/100 CM^2)		MAXIMUM NET EXPOSURE RATE (µR/HR)	QUALITATIVE SCAN (CPM)	
	BETA	ALPHA	BETA	GAMMA	ALPHA	BETA
$DCGL_W$	**5000**	**1000**	**1000**	**5**		
1	696	2.6	28	2	NDA	NDA
2	104	2.6	19	NM	NDA	NDA
3	185	2.6	22	3	NDA	NDA
4	294	2.6	31	NM	NDA	NDA
5	172	5.4	16	NM	NDA	NDA
6	87	2.6	22	NM	NDA	NDA
7	217	2.6	39	NM	NDA	NDA
8	331	2.6	51	NM	NDA	NDA
9	652	2.6	54	NM	NDA	NDA
10	226	2.6	42	3	NDA	NDA
11	113	2.6	25	2	NDA	NDA
12A&B	348	2.6	31	4	NDA	NDA
13	739	2.6	25	4	NDA	NDA
14	783	5.4	19	1	NDA	NDA

NDA= no detectable activity NM= not measured

TABLE 5: MAXIMUM SURVEY RESULTS

5.0 CONCLUSION

In all survey units, the highest quantitative total beta measurement was 783 dpm/100cm^2, well below the total contamination DCGL$_W$ of 5000dpm/100cm^2. The highest removable beta found was 54 dpm/100cm^2, and highest removable alpha found was 5.4 dpm/100cm^2 ,again, well below a removable contamination DCGL$_W$ of 1000dpm/100cm^2. The range of contamination was well below DOE approved acceptance limits for both alpha and beta contamination. The highest net ambient gamma measurement was 4 mR/hr, which was below the DCGL$_W$ of 5 μR/hr above background.

Based on the results of the investigations reported here, the basement area, Vacuum Equipment Room, High Bay, Building 4459, and all other Phase I surveyed areas of Building 4059 are free of contamination. They meet the Department of Energy approved acceptance criteria and Building 4059 is therefore suitable for release for "unrestricted use" with no radiological restrictions.

6.0 REFERENCES

6.1 Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), December 1997.

6.2 "Two-Phase Site Release Approach to B4059 at Rocketdyne's SSFL", letter from P.Rutherford to S.Hsu (DHS), February 3, 1999, 99RC-0722.

6.3 Rocketdyne Document N0010P000033, "Methods and Procedures for Radiological Monitoring"

6.4 Rocketdyne Form 732-A, Rev. 8-97, "Radiation Survey Report"

6.5 Rocketdyne Document N001OP000032, "Training Program for Radiation Protection and Health Physics Personnel"

6.6 Document ER-AN-0005, "Training Plan for Environmental Restoration of Radioactively Contaminated Facilities", original dated September 17, 1991

6.7 Rocketdyne Master Emergency Plan

6.8 Letter from M. Lopez to M. Lee, "B4059 D&D Approval," January 29, 1999.

6.9 Letter from R. Lupo to P. Rutherford, "Untitled," March 12, 1999, 002002AC.

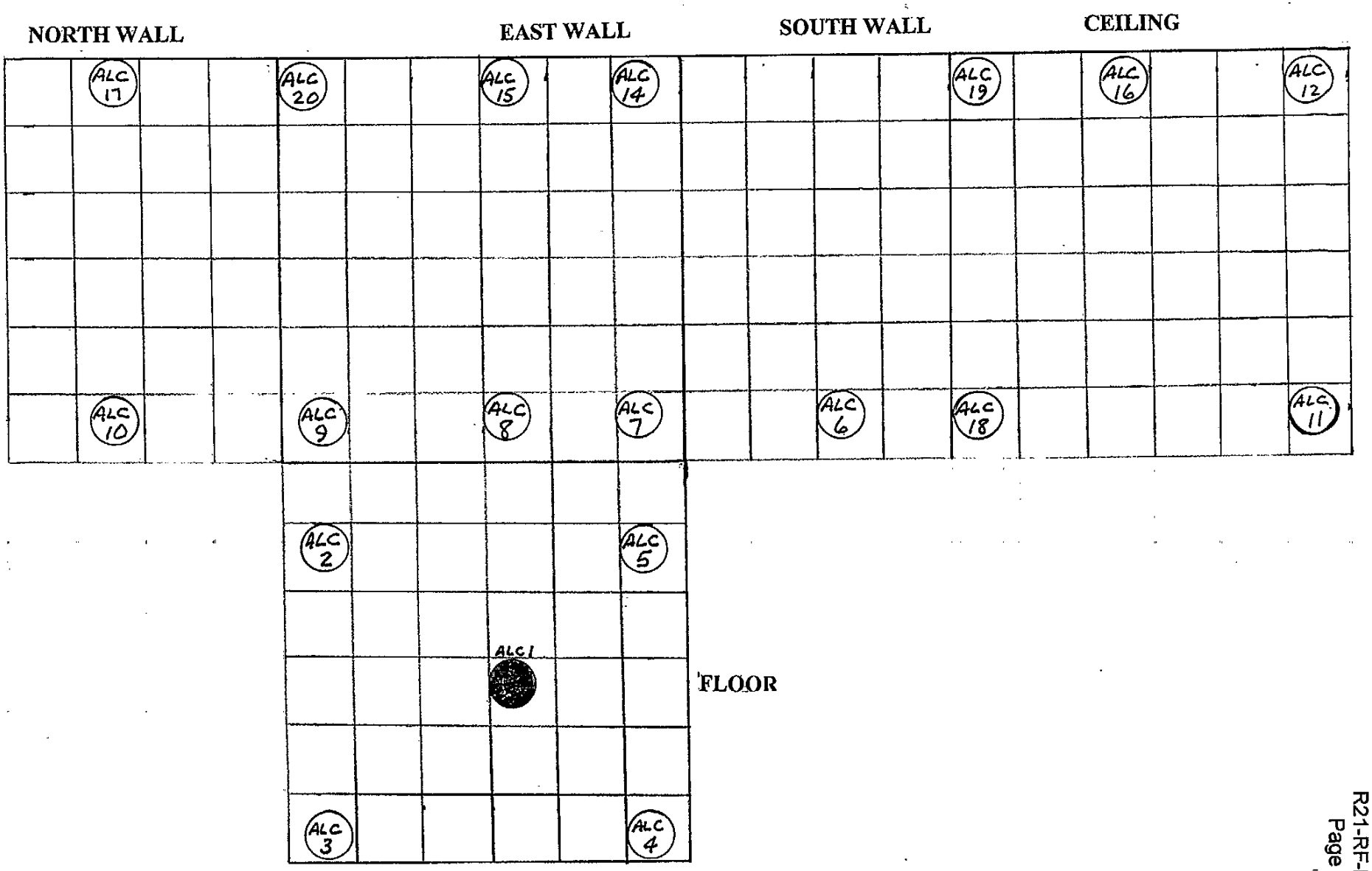
APPENDIX A

SURVEY MAPS

B4059 VAULT ALCOVE

CLASS I SURVEY UNIT # 1 ALC1 THRU ALC20
MARSSIM (R21-RF)RS-00001

NORTH



COMMENTS: RANDOM STARTING COORDINATES ARE 2.74M, 2.05M STARTING AT THE SOUTHWEST CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED . CIRCLE. SURVEY AREA IS 10' DEEP X 20' WIDE X 13'6" HIGH.

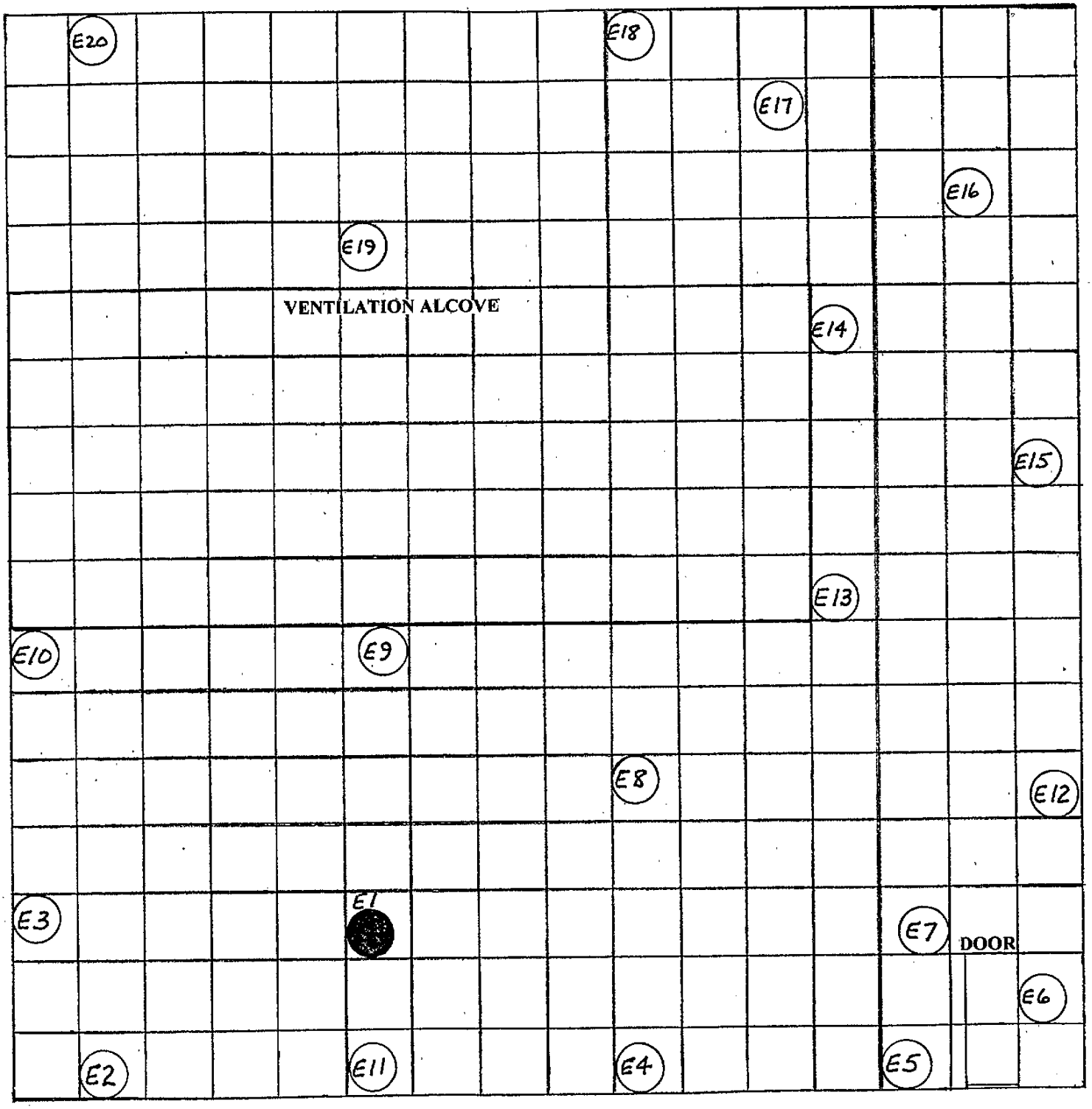
XG

B4059 VAULT EAST WALL

CLASS I SURVEY UNIT # 2 E1 THRU E20

MARSSIM (R21-RF) RS-00001

NORTH

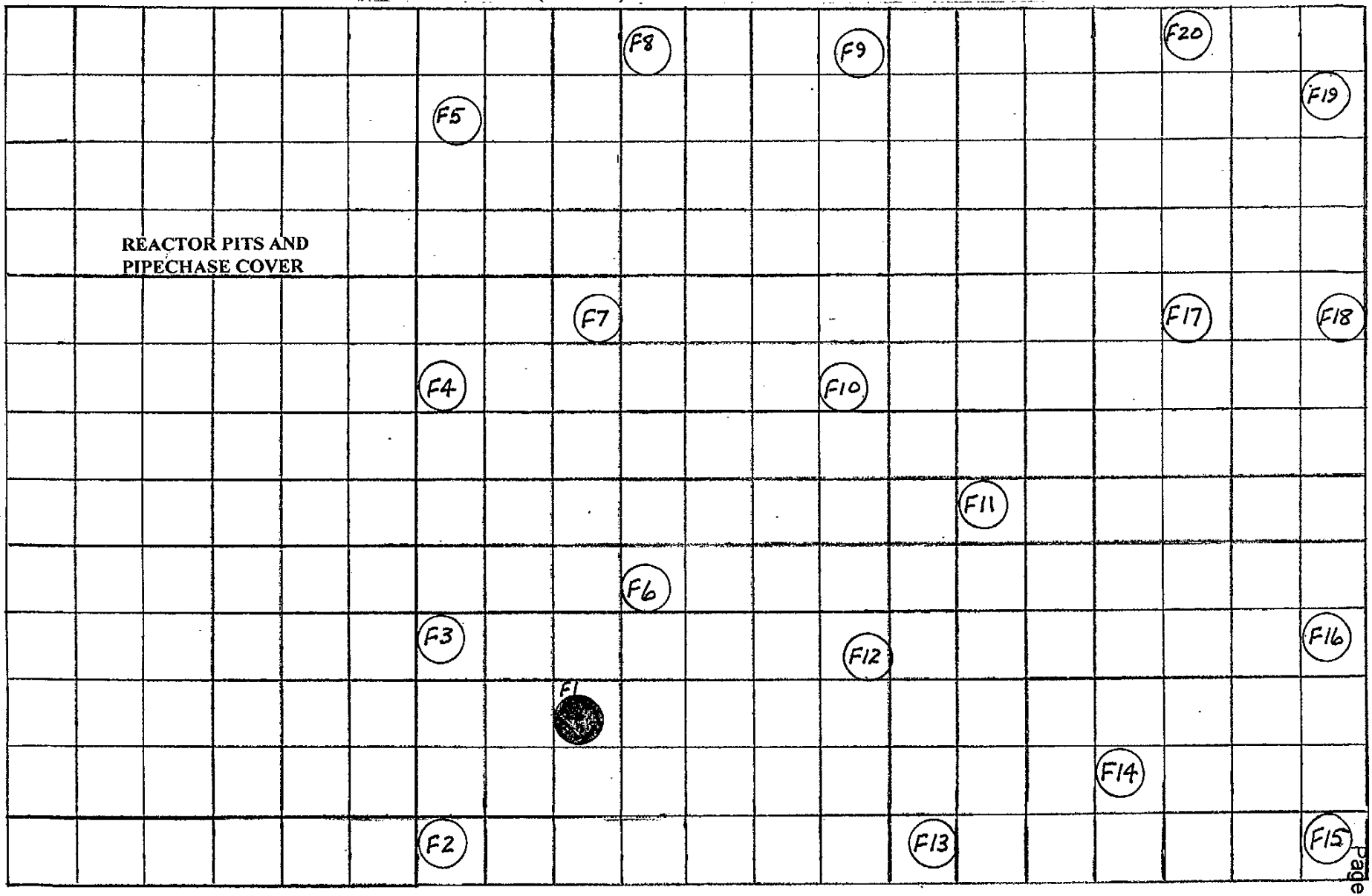


COMMENTS: RANDOM STARTING COORDINATES ARE 2.83M, 1.88M STARTING AT THE LOWER LEFT HAND CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE TANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA IS 32' HIGH X 28' WIDE.

B4059 VAULT FLOOR

CLASS I SURVEY UNIT # 3 F1 THRU F20

MARSSIM (R21-RF) RS-00001



COMMENTS: RANDOM STARTING COORDINATES ARE 2.47M, 1.68M STARTING AT THE SOUTHWEST CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA IS 28' LONG X 25' WIDE. REACTOR PIT/PIPECHASE COVER IS 13'6" X 28'.

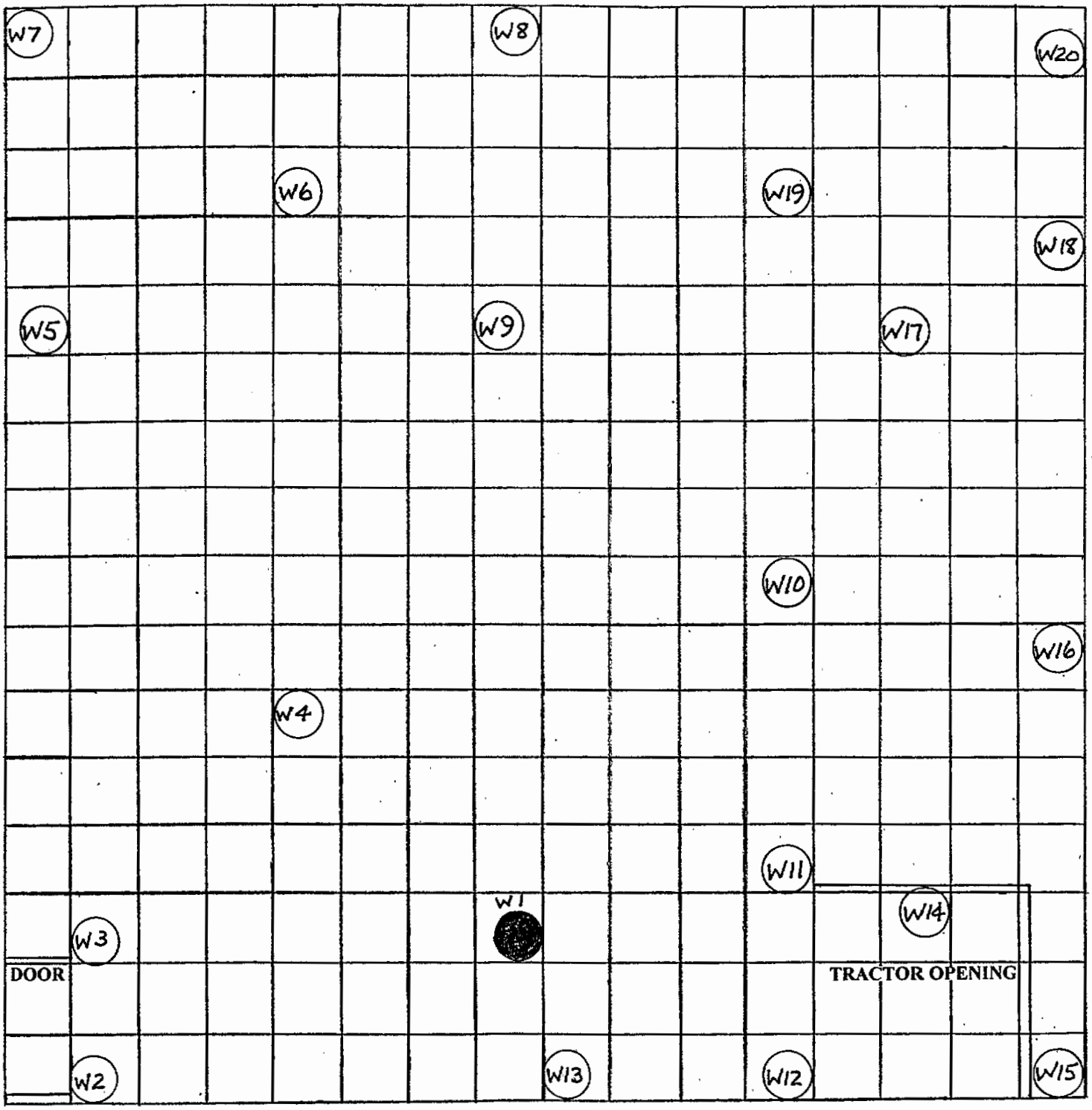
PVG

B4059 VAULT WEST WALL

CLASS I SURVEY UNIT #4 W1 THRU W20

MARSSIM (R21-RF) RS-00001

NORTH

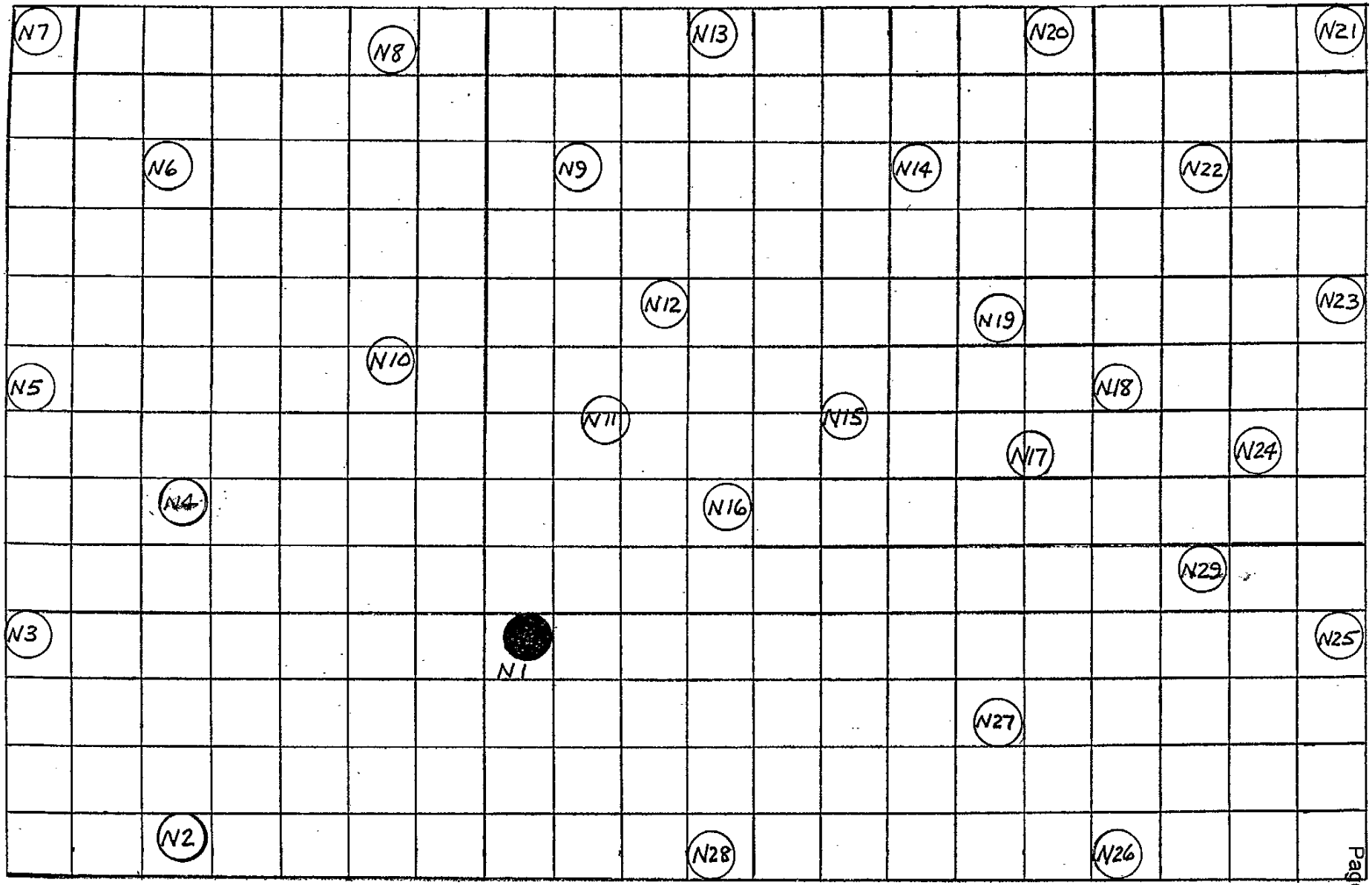


COMMENTS: RANDOM STARTING COORDINATES ARE 2.83M, 1.88M STARTING AT THE LOWER LEFT HAND CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY ARE IS 32' HIGH X 28' WIDE.

B4059 VAULT NORTH WALL

CLASS I SURVEY UNIT # 5 N1 THRU N29

MARSSIM (R21-RF) RS-00001

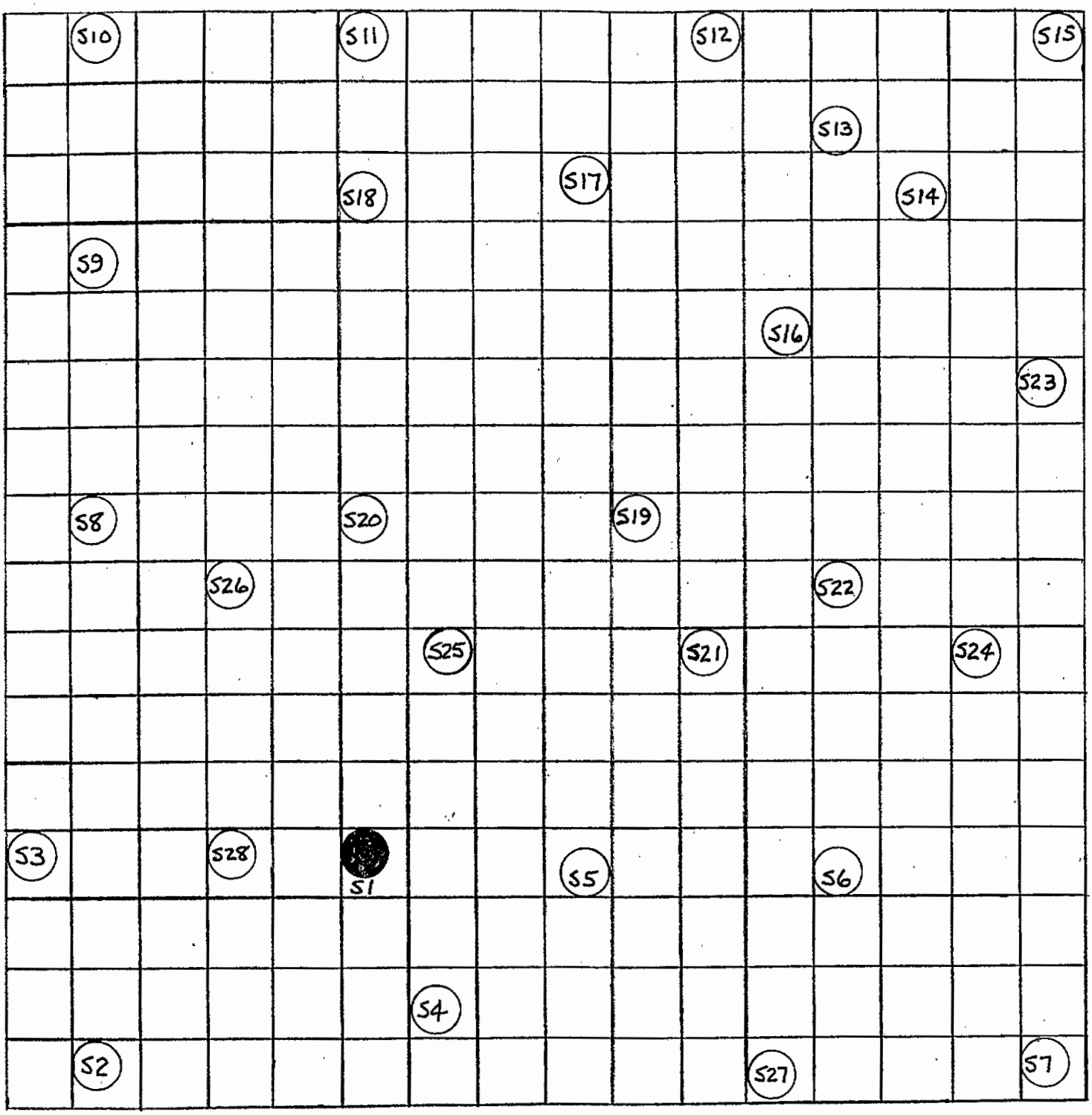


COMMENTS: RANDOM STARTING COORDINATES ARE 3.4M, 1.84M STARTING AT THE LOWER LEFT HAND CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE TANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA IS 32' HIGH X 38'6" WIDE.

B4059 VAULT SOUTH WALL

CLASS I SURVEY UNIT # 6 S1 THRU S28

MARSSIM (R21-RF) RS-00001

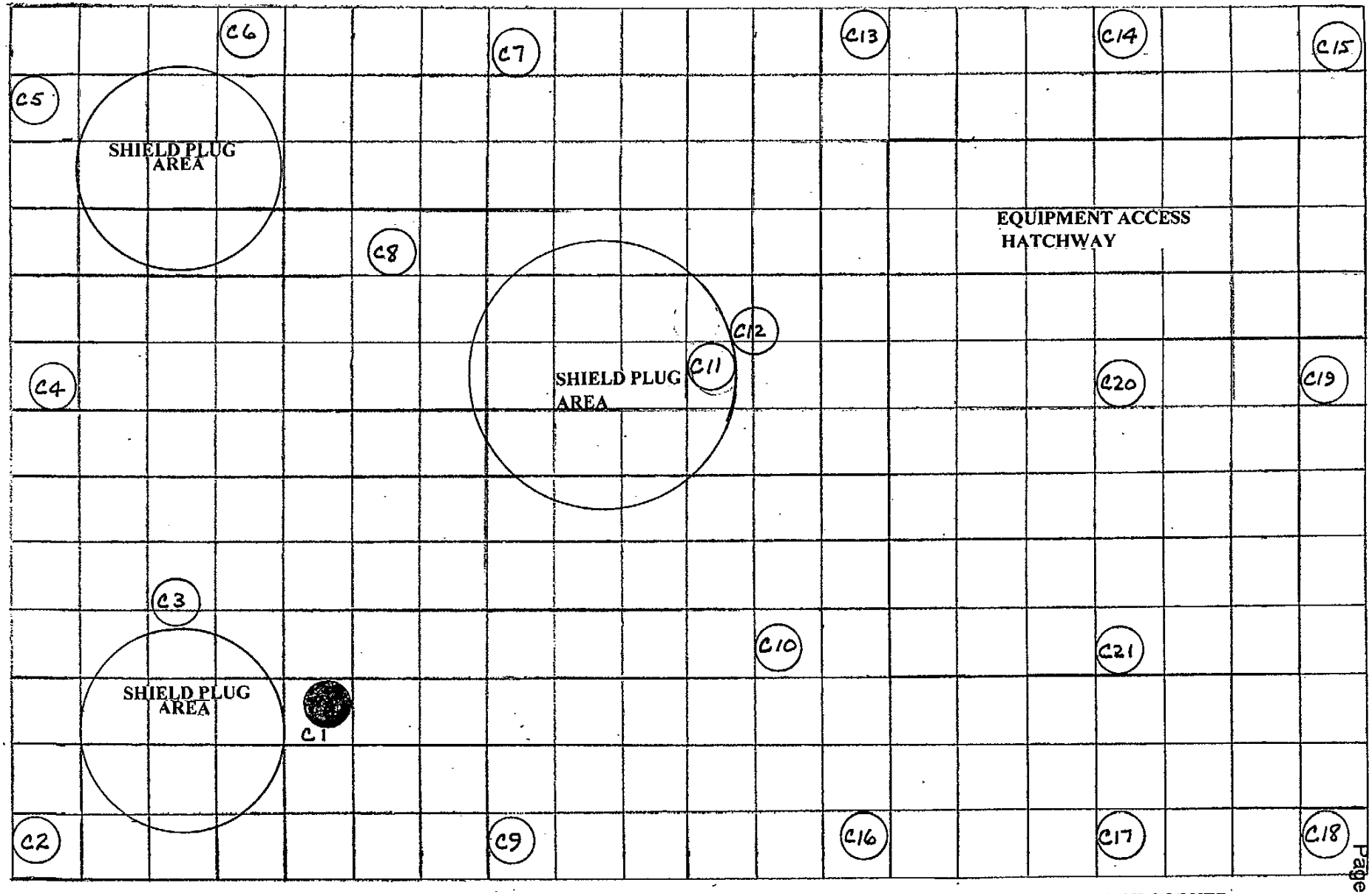


COMMENTS: RANDOM STARTING COORDINATES ARE 2.83M, 1.88M STARTING AT THE LOWER LEFT HAND CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY ARE IS 32' HIGH X 28' WIDE.

B4059 VAULT CEILING

CLASS I SURVEY UNIT # 7 C1 THRU C21

MARSSIM (R21-RF) RS-00001



COMMENTS: RANDOM STARTING COORDINATES ARE 3.4M, 1.84M STARTING AT THE SOUTHWEST CORNER. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA IS 32' WIDE AND 38'6" LONG.

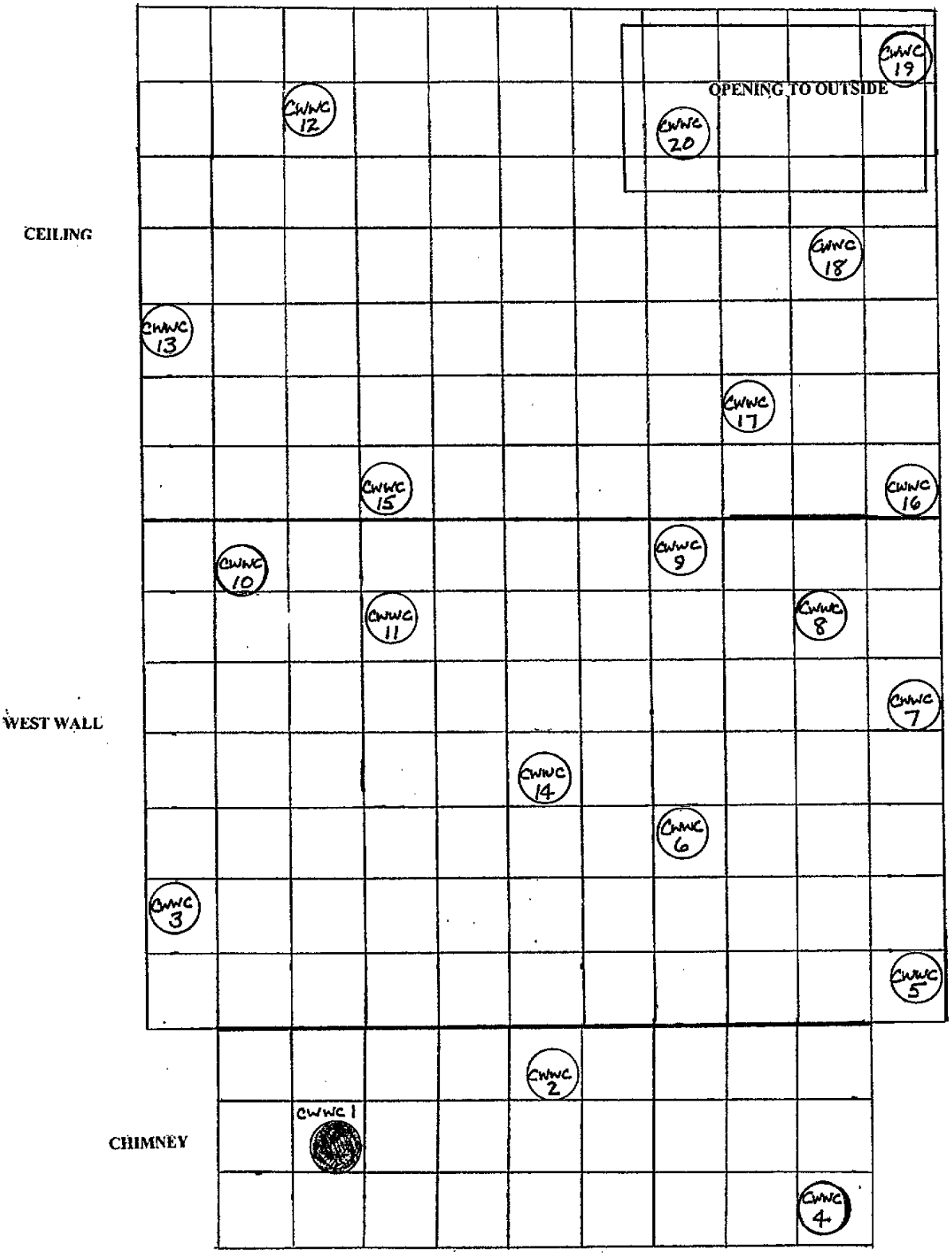
DGL

VACUUM EQUIPMENT ROOM WEST WALL, CEILING, & CHIMNEY

CLASS I SURVEY UNIT # 8 CWWC1 THRU CWWC20

MARSSIM (R21-RF) RS-00001

NORTH

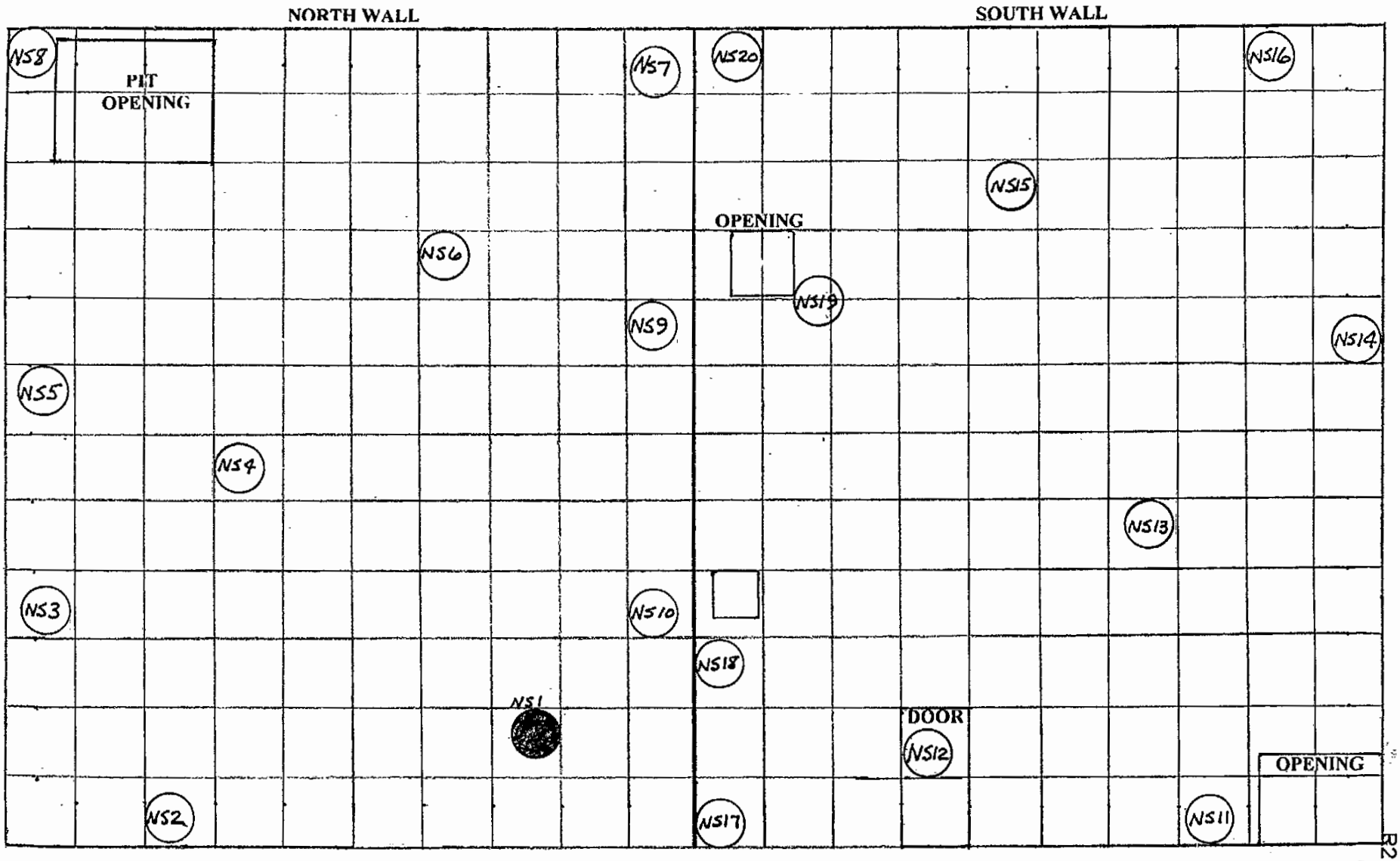


COMMENTS: RANDOM STARTING COORDINATES ARE 4.6M, 1.37M STARTING AT THE BOTTOM LEFT CORNER OF THE WEST WALL SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARK CIRCLE. SURVEY AREA WEST WALL IS 20' WIDE X 32' HIGH, CEILING IS 20' WIDE X 21' LONG, CHIMNEY IS 12' HIGH X 6' WIDE.

VACUUM EQUIPMENT ROOM NORTH WALL & SOUTH WALL

CLASS I SURVEY UNIT # 9 NS1 THRU NS20

MARSSIM (R21-RF) RS-00001



COMMENTS: RANDOM STARTING COORDINATES ARE 4.6M, 1.37M STARTING AT THE BOTTOM LEFT CORNER OF THE NORTH WALL.SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA NORTH WALL IS 20' WIDE X 32' HIGH AND THE SOUTH WALL IS 20' WIDE X 32' HIGH.

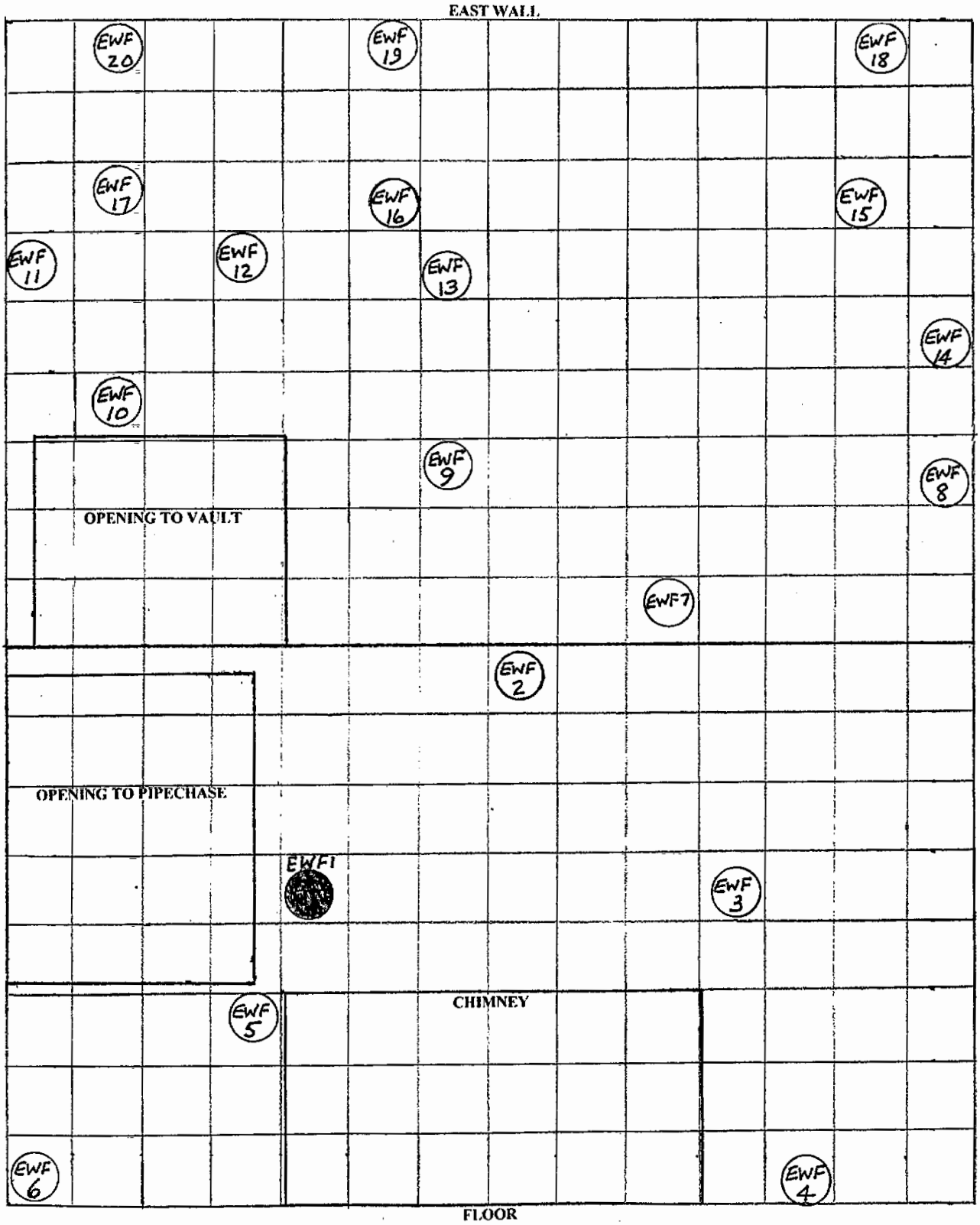
RVG

VACUUM EQUIPMENT ROOM EAST WALL & FLOOR

CLASS 1 SURVEY UNIT # 10 EWF1 THRU EWF20

MARSSIM (R21-RF) RS-00001

NORTH

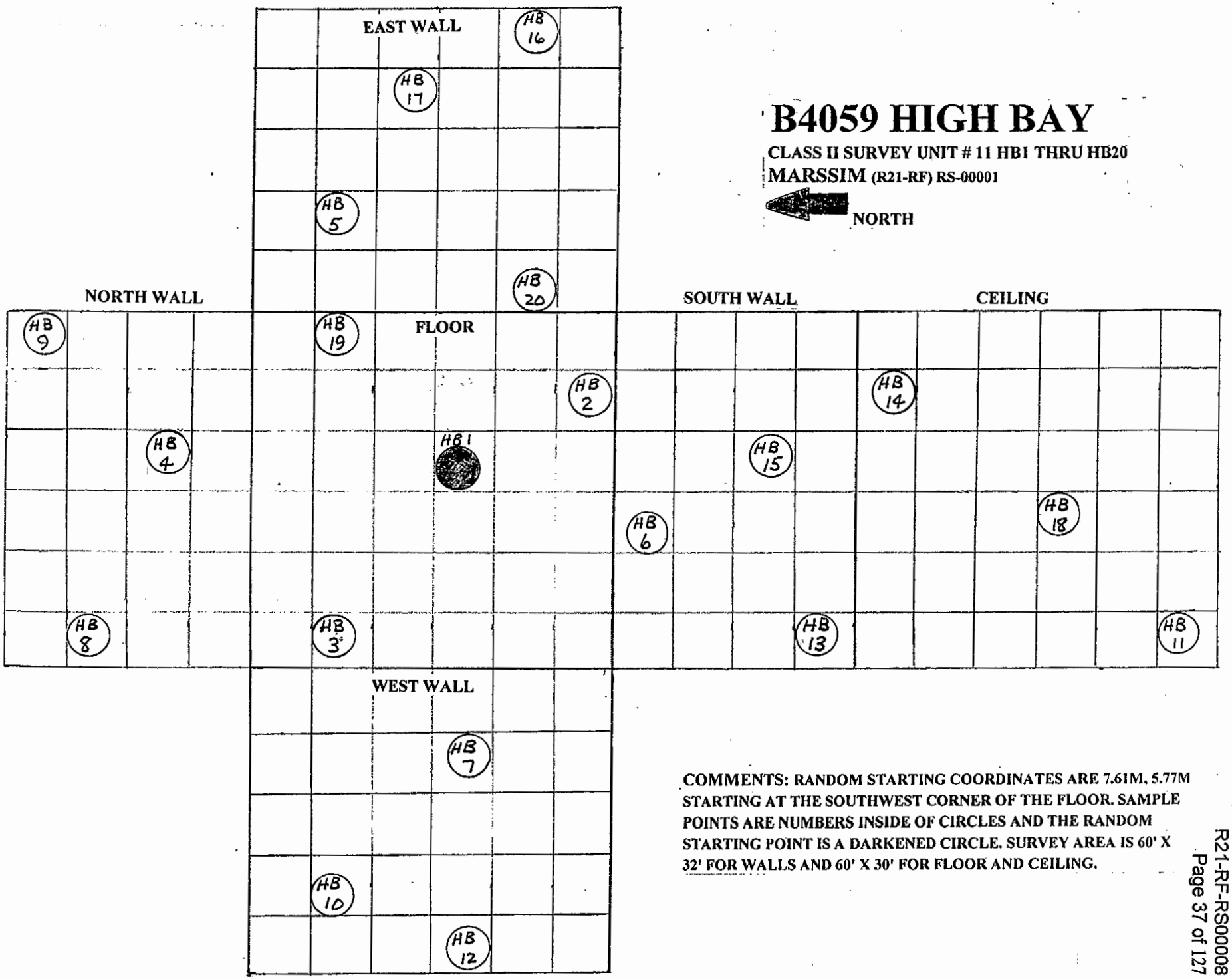


COMMENTS: RANDOM STARTING COORDINATES ARE 2.92M, 2.15M STARTING AT THE BOTTOM LEFT HAND CORNER OF THE EAST WALL. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA EAST WALL IS 20' WIDE X 32' HIGH AND THE FLOOR IS 20'6" WIDE X 20' LONG.

56

B4059 HIGH BAY

CLASS II SURVEY UNIT # 11 HB1 THRU HB20
MARSSIM (R21-RF) RS-00001



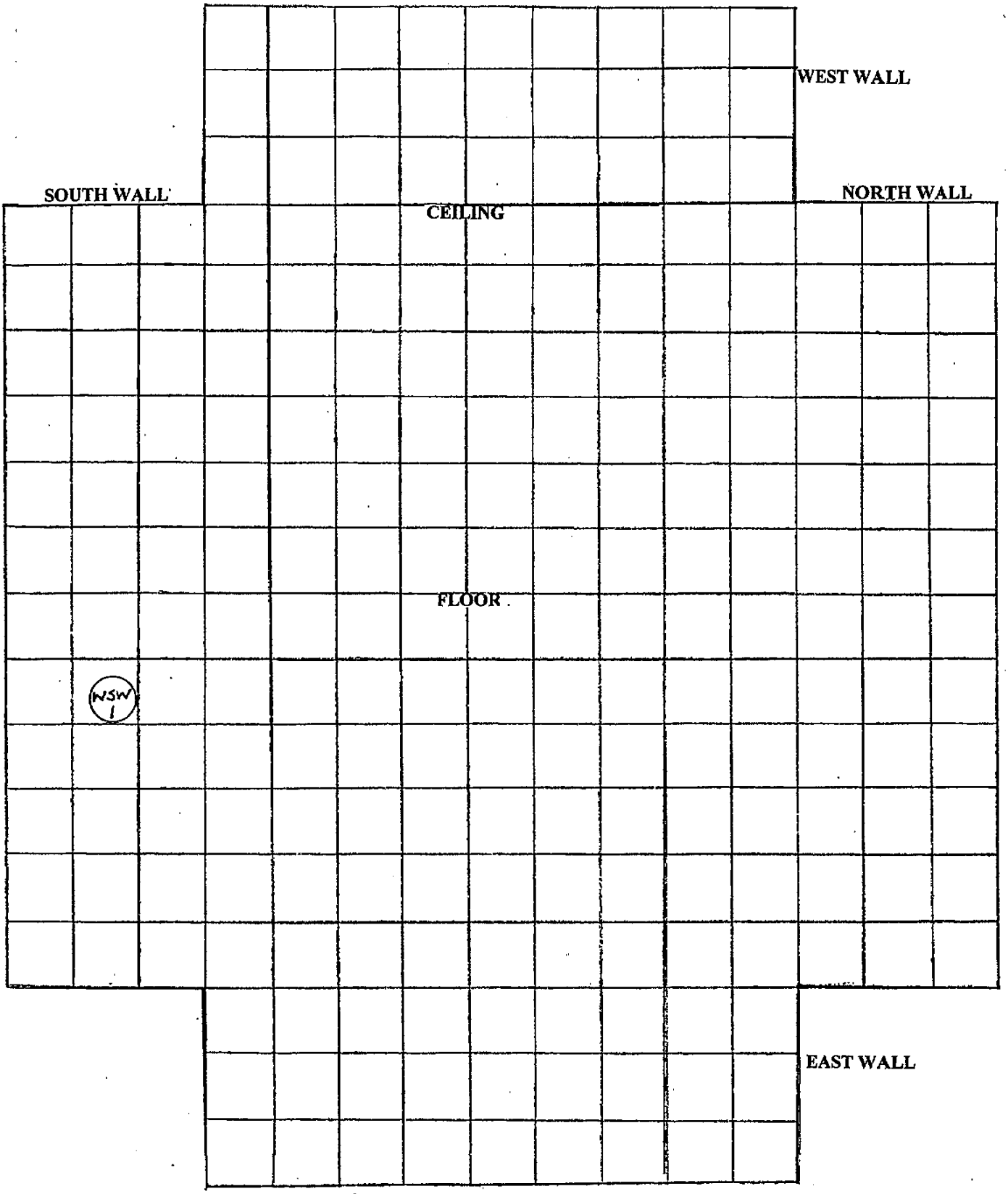
COMMENTS: RANDOM STARTING COORDINATES ARE 7.61M, 5.77M STARTING AT THE SOUTHWEST CORNER OF THE FLOOR. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA IS 60' X 32' FOR WALLS AND 60' X 30' FOR FLOOR AND CEILING.

ACC

B4059 WEST STAIRWELL

CLASS I SURVEY UNIT # 12B WSW1 THRU WSW17
MARSSIM (R21-RF) RS-00001

TOP ELEVATION

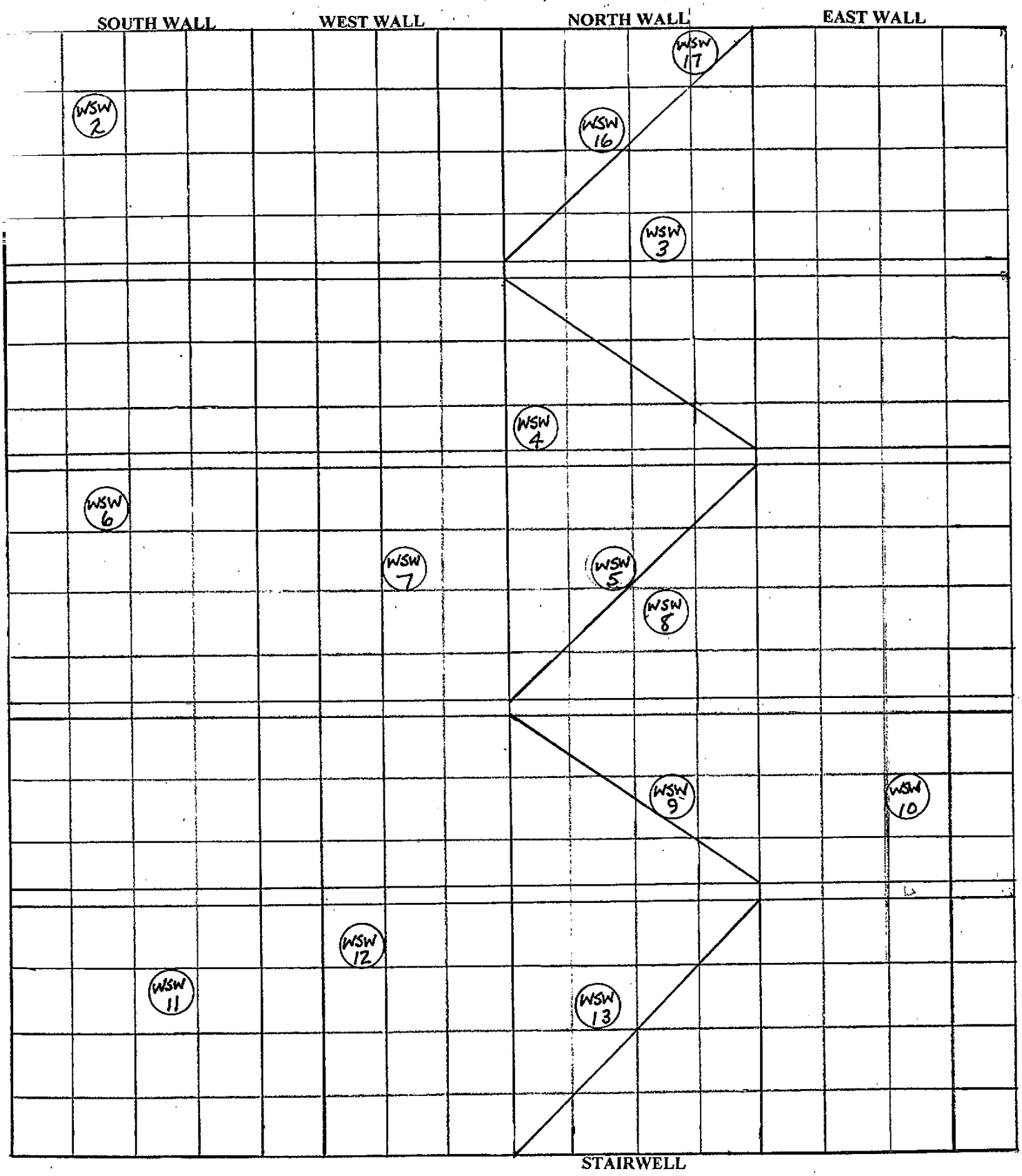


COMMENTS: WEST STAIRWELL HAS 5 LANDINGS INCLUDING THE BOTTOM, 5 SETS OF STAIRS, A TOP ROOM COVERING THE STAIRS, AND A BOTTOM LANDING AREA TO INCLUDE THE ACCESS AREA TO THE VAULT.

B4059 WEST STAIRWELL

CLASS I SURVEY UNIT # 12B WSW1 THRU WSW17

MARSSIM (R21-RF) RS-00001



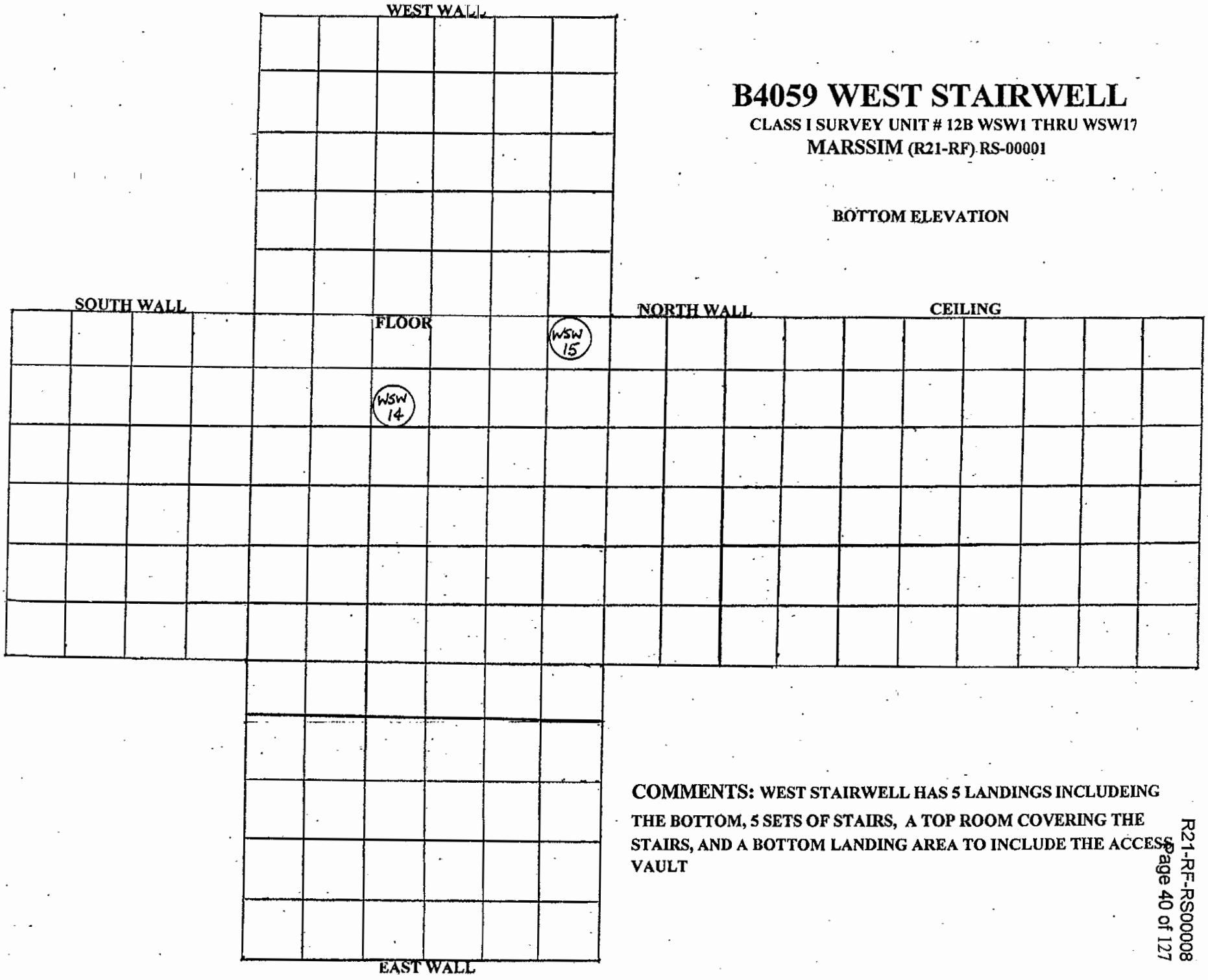
COMMENTS: WEST STAIRWELL HAS 5 LANDINGS INCLUDING THE BOTTOM, 5 SETS OF STAIRS, A TOP ROOM COVERING THE STAIRS, AND A BOTTOM LANDING AREA TO INCLUDE THE ACCESS AREA TO THE VAULT.

B4059 WEST STAIRWELL

CLASS I SURVEY UNIT # 12B WSW1 THRU WSW17

MARSSIM (R21-RF) RS-00001

BOTTOM ELEVATION



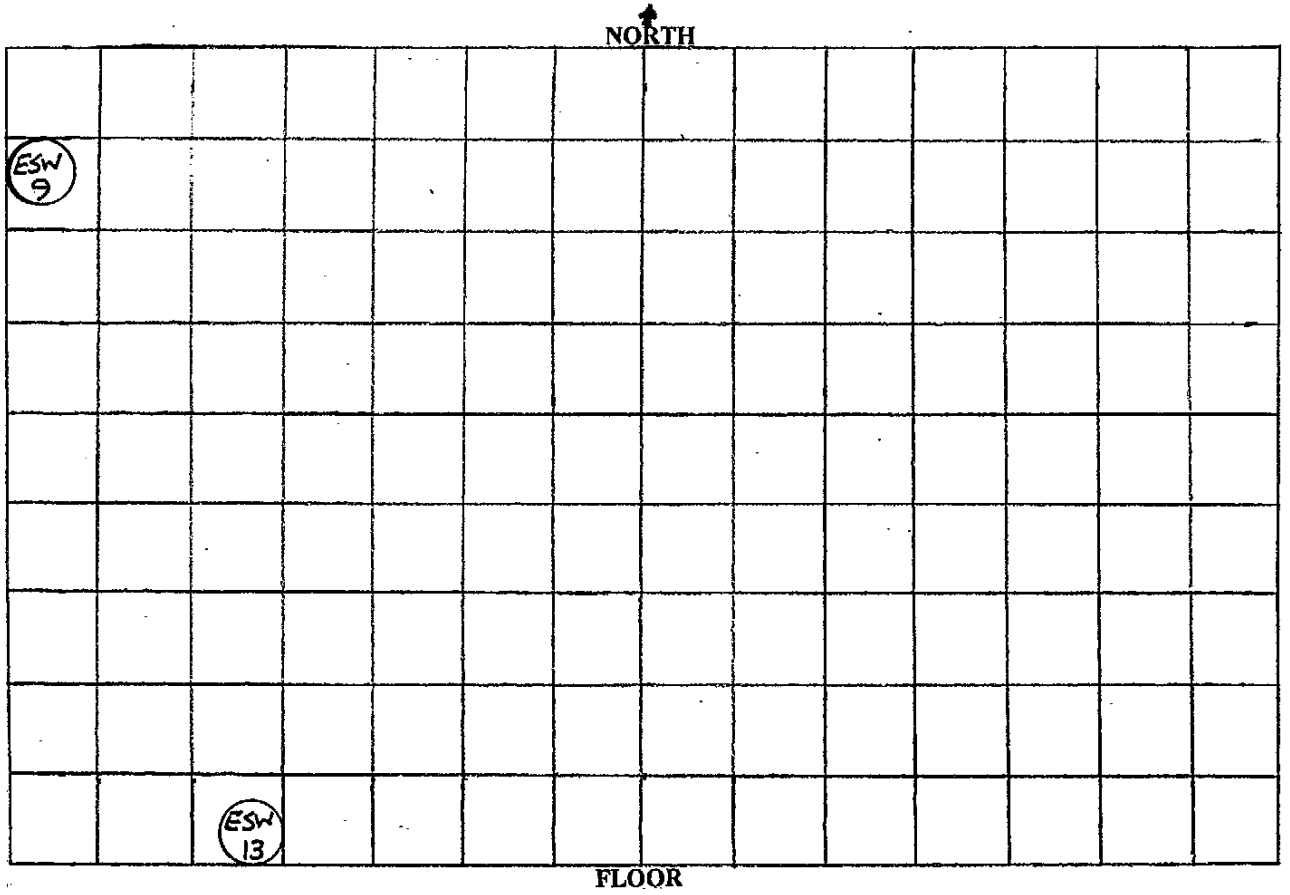
COMMENTS: WEST STAIRWELL HAS 5 LANDINGS INCLUDEING THE BOTTOM, 5 SETS OF STAIRS, A TOP ROOM COVERING THE STAIRS, AND A BOTTOM LANDING AREA TO INCLUDE THE ACCESS VAULT

ESC

B4059 EAST STAIRWELL

CLASS I SURVEY UNIT # 12A ESW1 THRU ESW17

MARSSIM (R21-RF) RS-00001

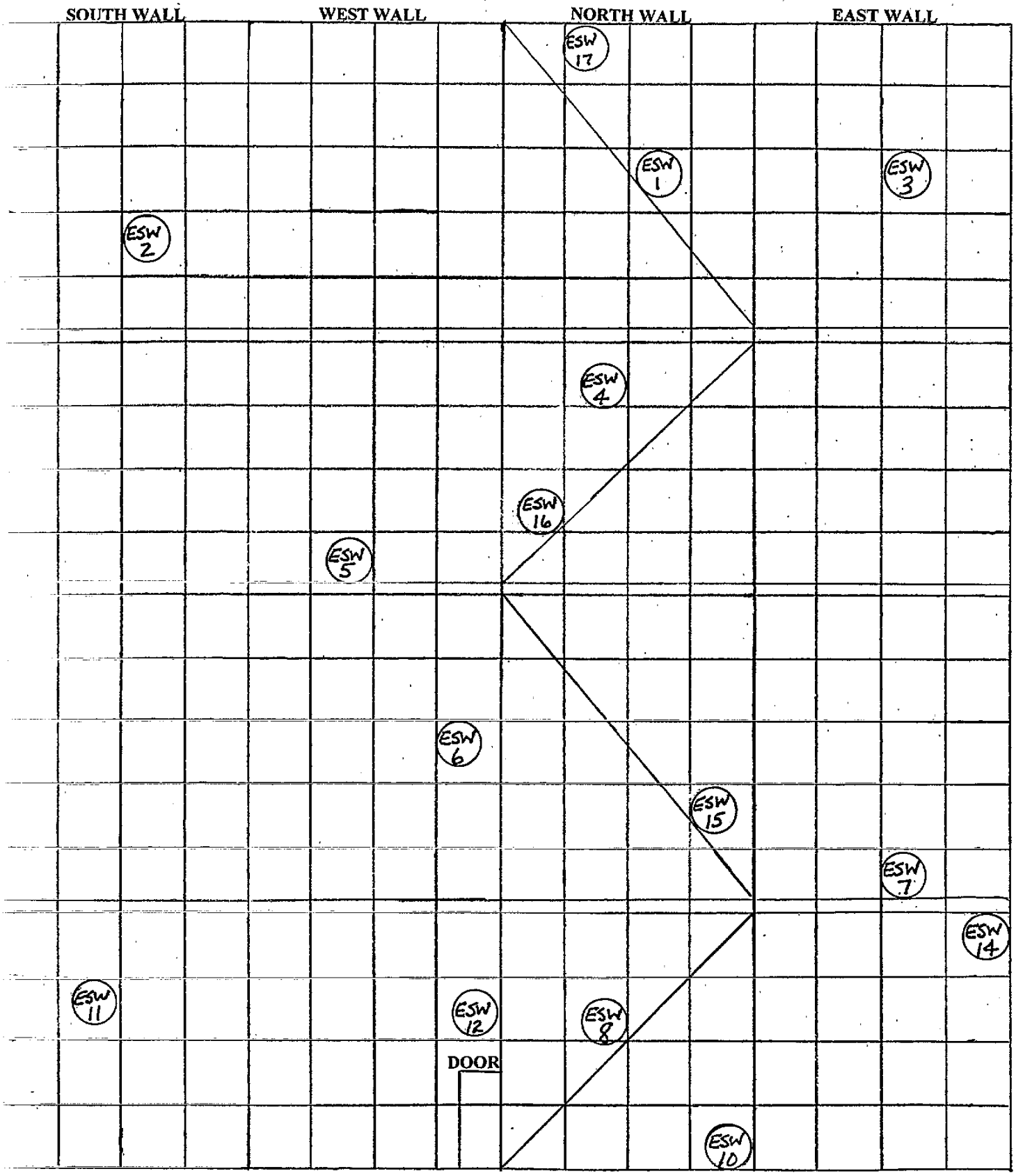


COMMENTS: THE EAST STAIRWELL HAS 4 LANDINGS INCLUDING THE BOTTOM, 3 SETS OF STAIRS, AND A BOTTOM LANDING ROOM LEADING TO THE EAST END OF THE VAULT.

B4059 EAST STAIRWELL

CLASS I SURVEY UNIT # 12A ESW1 THRU ESW17

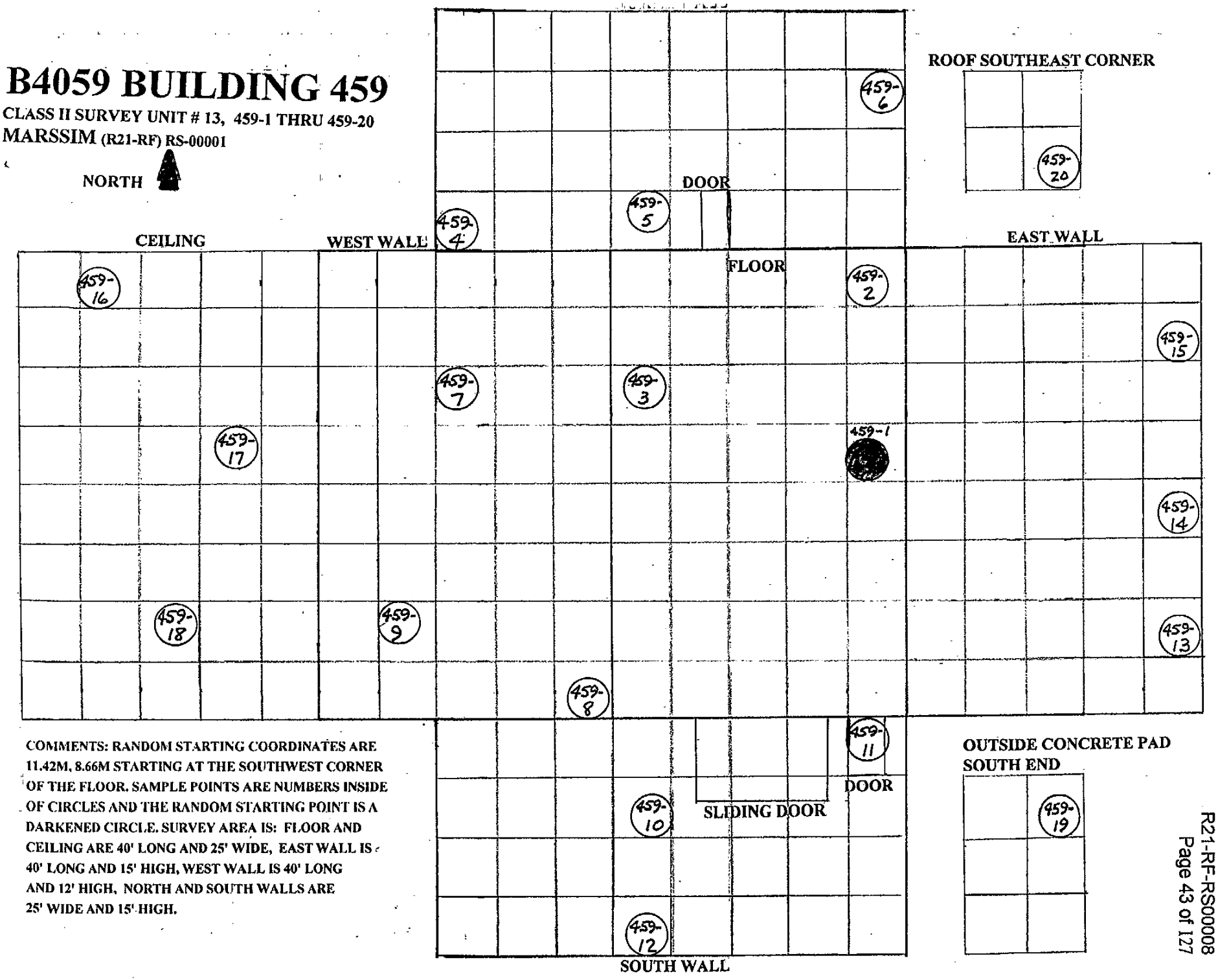
MARSSIM (R21-RF) RS-00001



COMMENTS: THE EAST STAIRWELL HAS 4 LANDINGS INCLUDING THE BOTTOM, 3 SETS OF STAIRS, AND A BOTTOM LANDING ROOM LEADING TO THE EAST END OF THE VAULT.

B4059 BUILDING 459

CLASS II SURVEY UNIT # 13, 459-1 THRU 459-20
MARSSIM (R21-RF) RS-00001



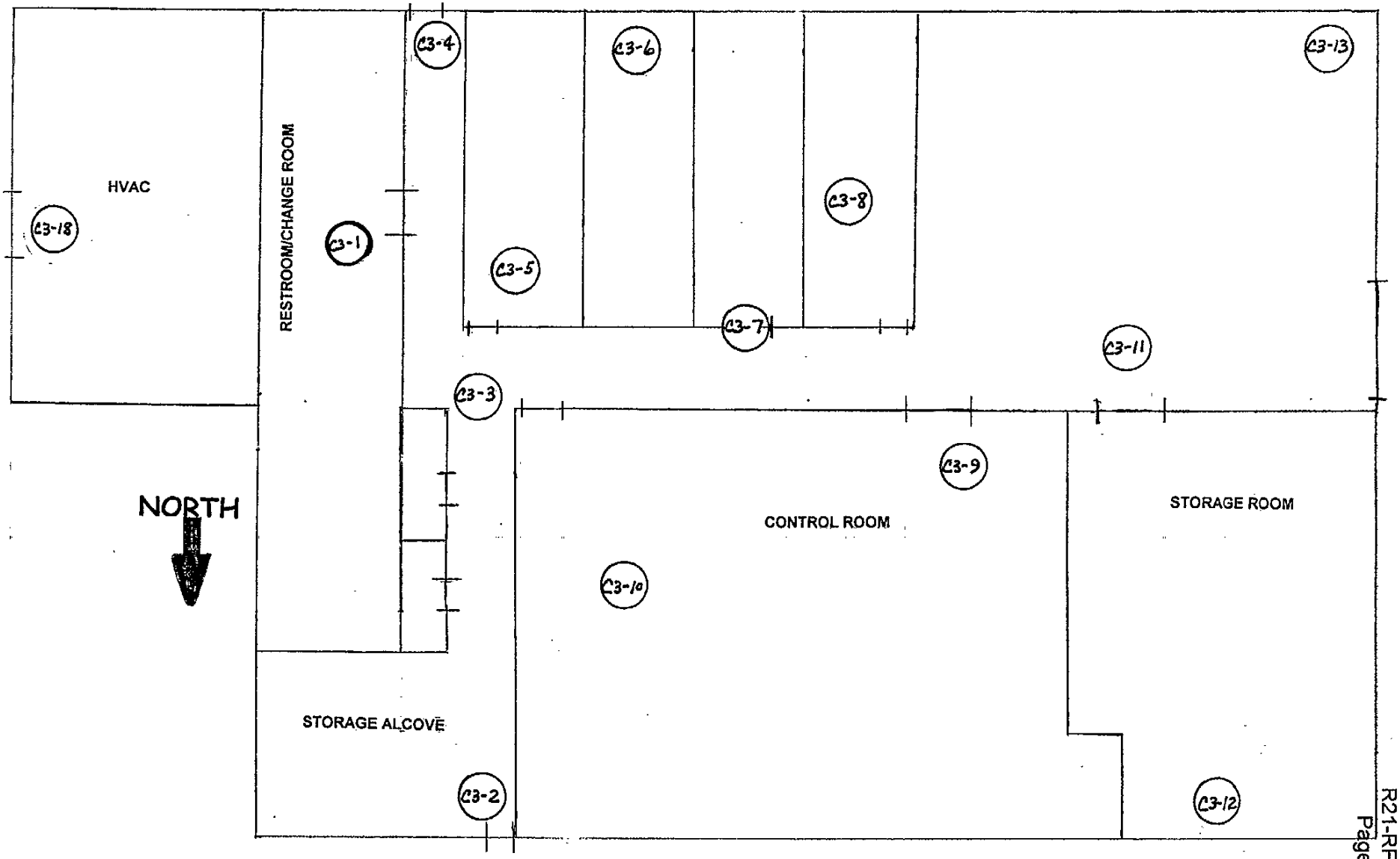
COMMENTS: RANDOM STARTING COORDINATES ARE 11.42M, 8.66M STARTING AT THE SOUTHWEST CORNER OF THE FLOOR. SAMPLE POINTS ARE NUMBERS INSIDE OF CIRCLES AND THE RANDOM STARTING POINT IS A DARKENED CIRCLE. SURVEY AREA IS: FLOOR AND CEILING ARE 40' LONG AND 25' WIDE, EAST WALL IS 40' LONG AND 15' HIGH, WEST WALL IS 40' LONG AND 12' HIGH, NORTH AND SOUTH WALLS ARE 25' WIDE AND 15' HIGH.

B4059 OFFICES AND OUTSIDE AREAS

CLASS III SURVEY UNIT # 14 C3-1 THRU C3-20

MARSSIM

(R21-RF)RS-00001



COMMENTS:SURVEY POINTS FOR THE OFFICES, OUTSIDE AREAS AND ROOF OF B4059

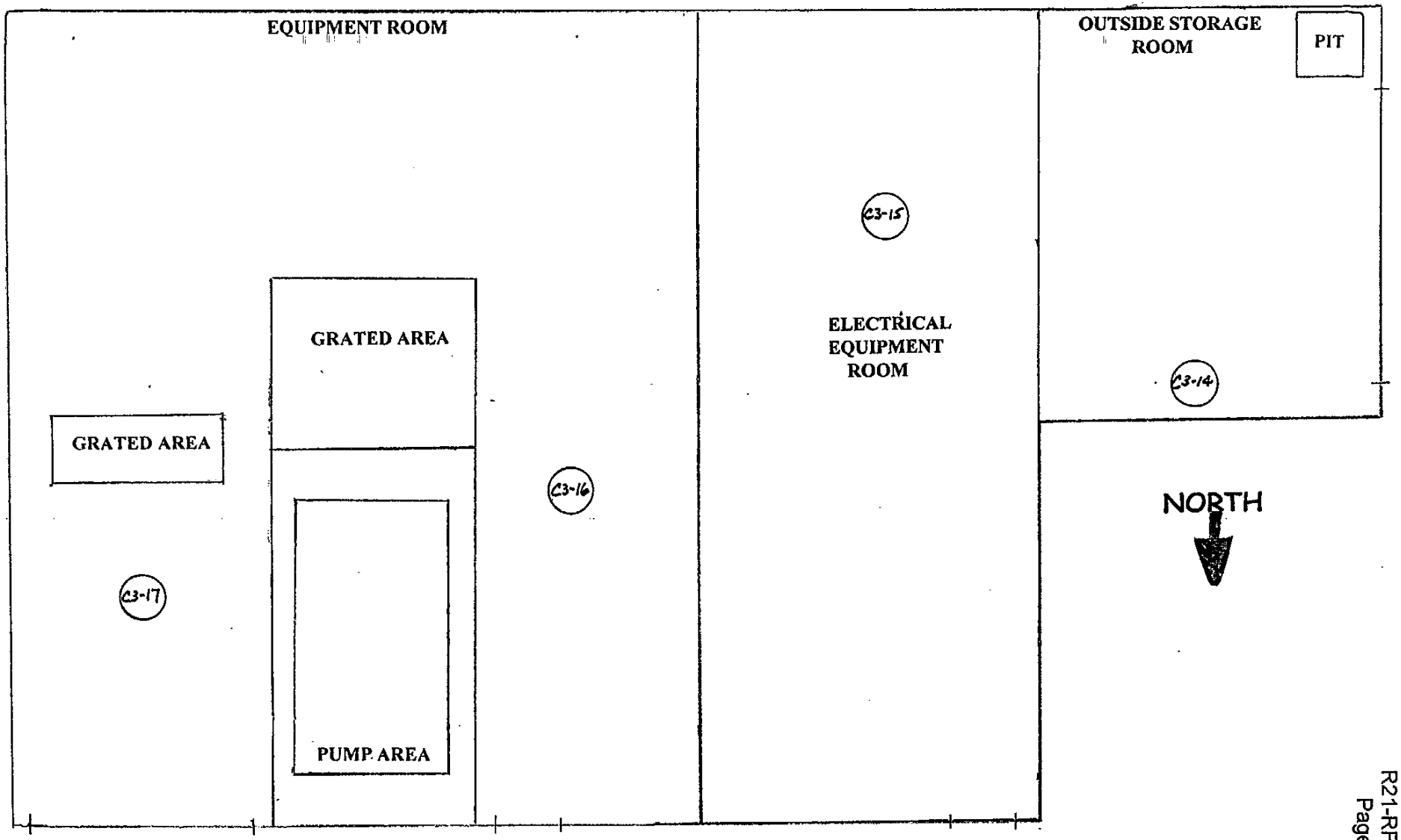
BG

B4059 OFFICES AND OUTSIDE AREAS

CLASS III SURVEY UNIT # 14 C3-1 THRU C3-20

MARSSIM

(R21-RF)RS-00001



COMMENTS:SURVEY POINTS FOR THE OFFICES, OUTSIDE AREAS AND ROOF OF B4059

RSG

B4059 OFFICES AND OUTSIDE AREAS ROOF

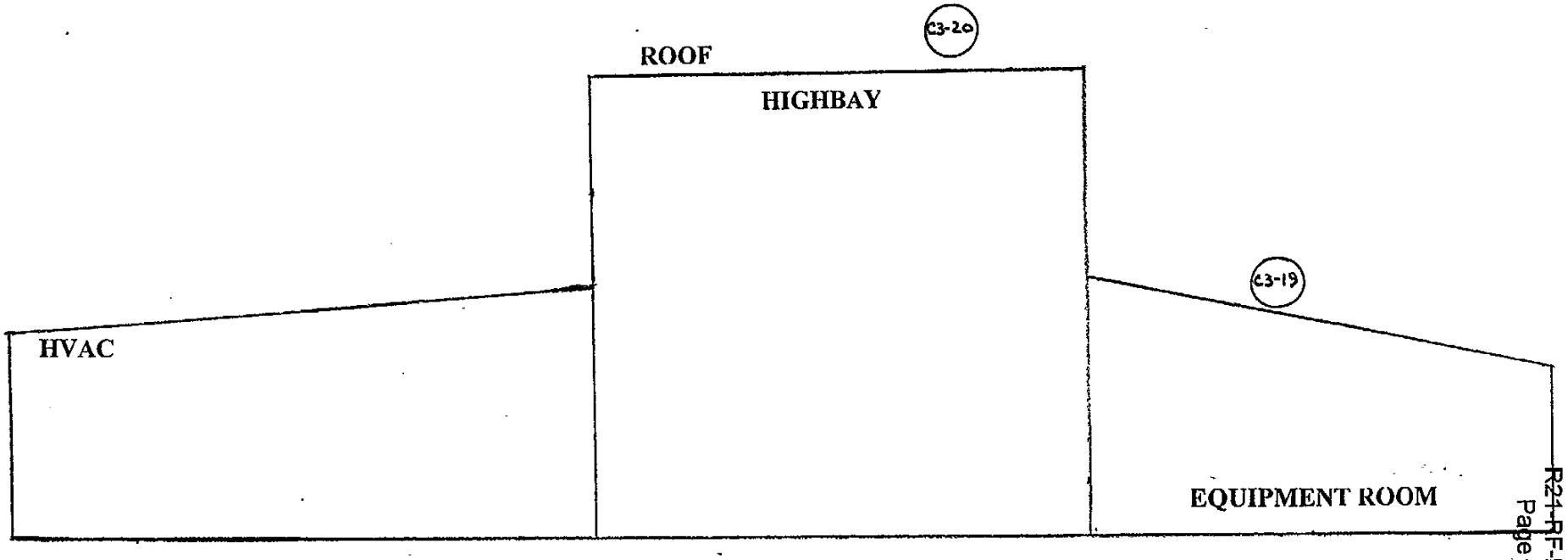
CLASS III SURVEY UNIT # 14 C3-1 THRU C3-20

MARSSIM

(R21-RF)RS-00001

EAST VIEW

NORTH



COMMENTS:SURVEY POINTS FOR THE OFFICES, OUTSIDE AREAS AND ROOF OF B4059

RSC

APPENDIX B

CLASS I SURVEY RESULTS

BUILDING 4059 CLASS I SURVEY UNIT 1 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

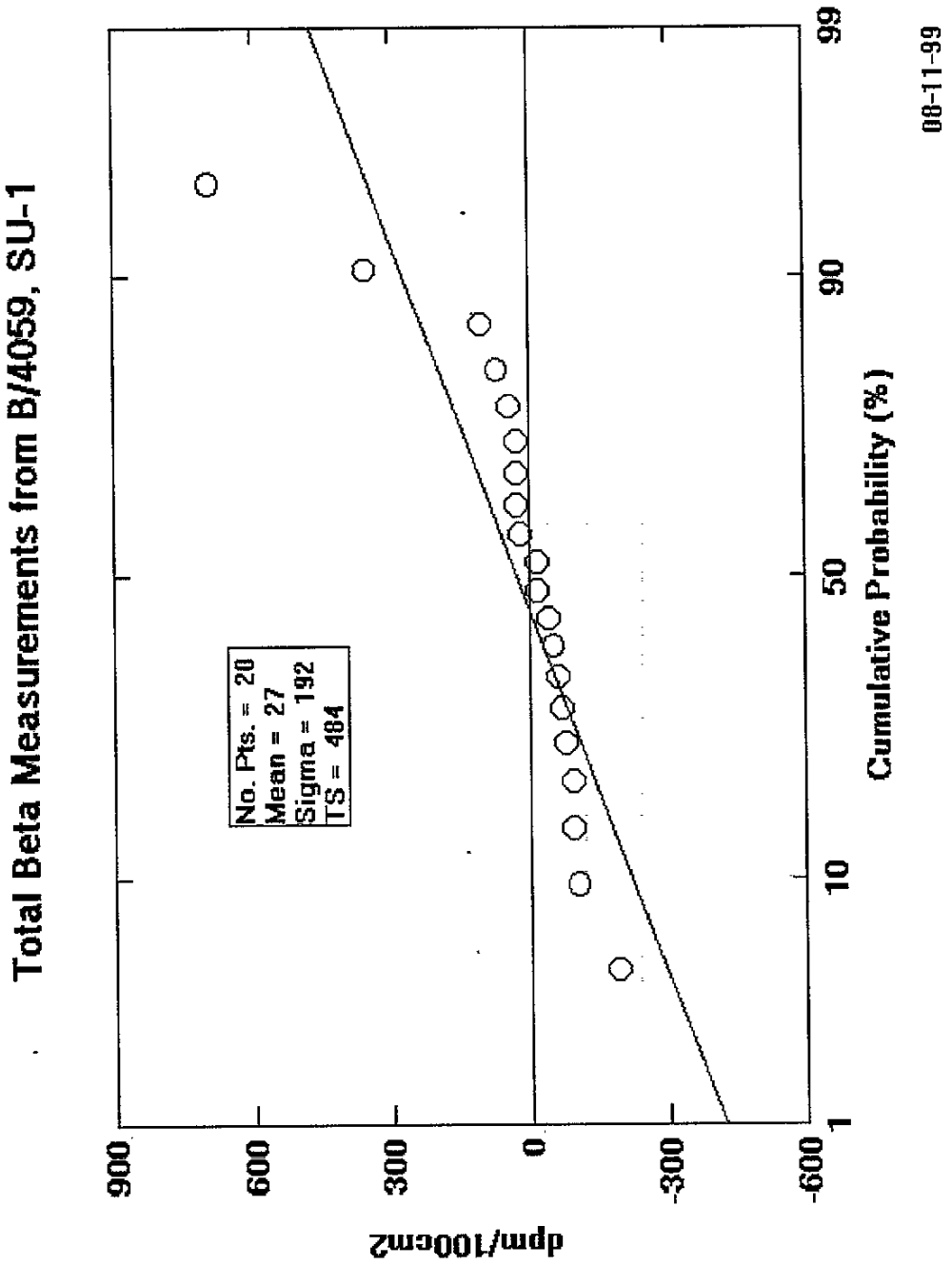
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
ALCOVE	1	696	4304	1
ALCOVE	2	17	4982	1
ALCOVE	3	26	4973	1
ALCOVE	4	356	4643	1
ALCOVE	5	-191	5191	1
ALCOVE	6	-69	5069	1
ALCOVE	7	-78	5078	1
ALCOVE	8	104	4895	1
ALCOVE	9	43	4956	1
ALCOVE	10	-43	5043	1
ALCOVE	11	-60	5060	1
ALCOVE	12	-52	5052	1
ALCOVE	13	26	4973	1
ALCOVE	14	26	4973	1
ALCOVE	15	-17	5017	1
ALCOVE	16	-95	5095	1
ALCOVE	17	-17	5017	1
ALCOVE	18	69	4930	1
ALCOVE	19	-104	5104	1
ALCOVE	20	-95	5095	1
			TOTAL POSITIVES	20

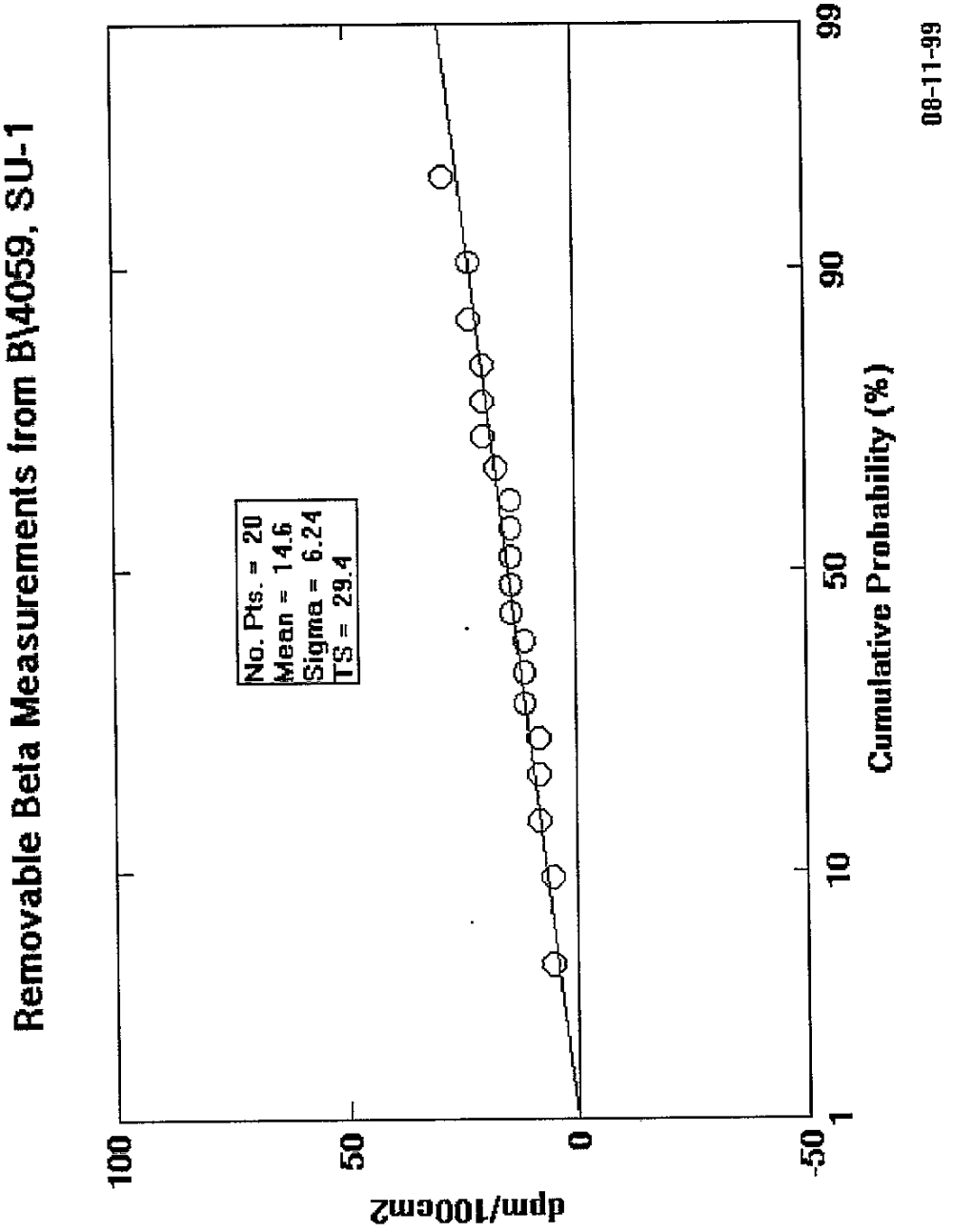
BUILDING 4059 CLASS I SURVEY UNIT 1 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
ALCOVE	1	28	971	1
ALCOVE	2	19	980	1
ALCOVE	3	5	994	1
ALCOVE	4	14	985	1
ALCOVE	5	8	991	1
ALCOVE	6	5	994	1
ALCOVE	7	14	985	1
ALCOVE	8	14	985	1
ALCOVE	9	8	991	1
ALCOVE	10	19	980	1
ALCOVE	11	14	985	1
ALCOVE	12	22	977	1
ALCOVE	13	11	988	1
ALCOVE	14	19	980	1
ALCOVE	15	17	982	1
ALCOVE	16	14	985	1
ALCOVE	17	8	991	1
ALCOVE	18	22	977	1
ALCOVE	19	11	988	1
ALCOVE	20	11	988	1
			TOTAL POSITIVES	20

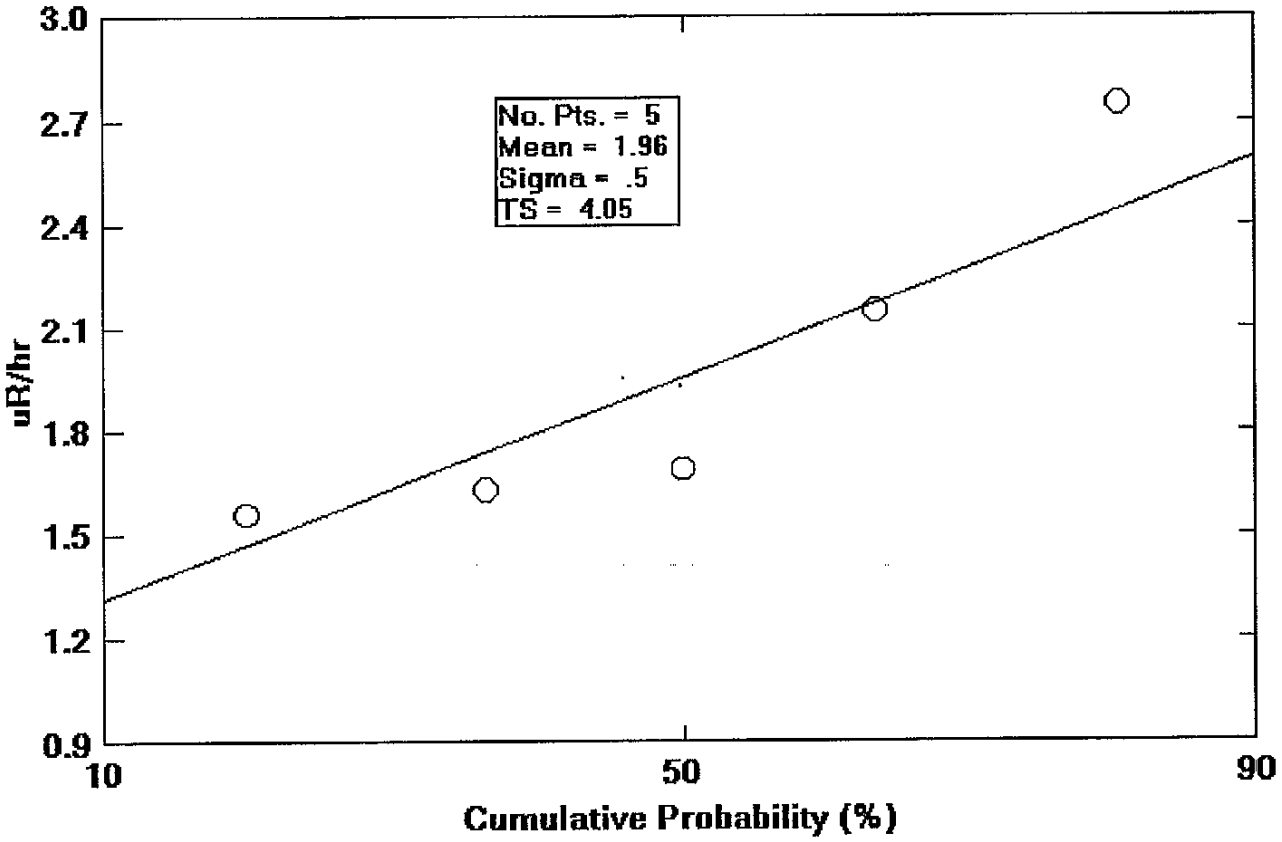
BUILDING 4059 CLASS I SURVEY UNIT 1 SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
ALCOVE	1	1.5	3.4	1
ALCOVE	2	1.6	3.3	1
ALCOVE	3	2.1	2.8	1
ALCOVE	4	2.7	2.2	1
ALCOVE	5	1.6	3.3	1
			TOTAL POSITIVES	5


Total Beta Measurements from B/4059, SU-1
No. Pts. = 20
Mean = 27
Sigma = 192
TS = 484
dpm/100cm2
900
600
300
0
-300
-600
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B\4059, SU-1
No. Pts. = 20
Mean = 14.6
Sigma = 6.24
TS = 29.4
dpm/100cm2
100
50
0
-50
1
10
50
90
99
Cumulative Probability (%)
08-11-99

Net Ambient Gamma Measurements from B/4059, SU-1



08-11-99

B/4059 CLASS I
SU-1 ALCOVE

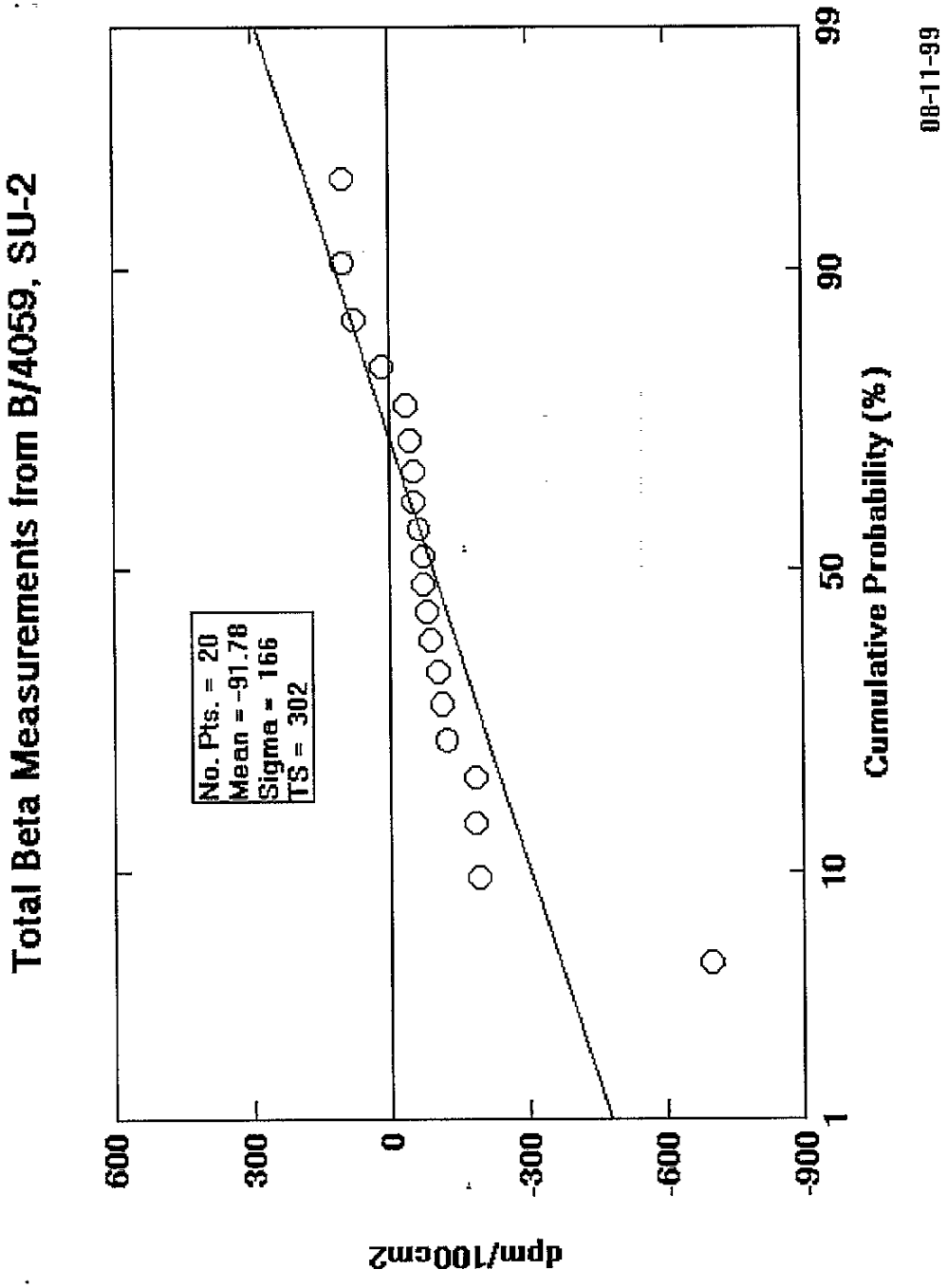
SAMPLE AREA	GRID NO.	1 MIN BETA COUNTS TOTAL	MAX	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	EFACT	AFACT	BETA SMEAR BACKG	EFACT	GAMMA BACK	EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	STD DEV	MAX	STD DEV	REM	STD DEV	GAMMA (uR/hr) TOTAL	STD DEV
ALCOVE 4/28/99	1	71		10	2134	55	8.7	5	0.11	2.89	1799	0.0047	1	696.0	488.29			28.56	9.19	1.56	0.29
ALCOVE	2	57		7	2162	55	8.7	5	0.11	2.89	1799	0.0047	2	17.4	158.52			19.91	7.71	1.69	0.29
ALCOVE	3	58		2	2260	55	8.7	5	0.11	2.89	1799	0.0047	3	26.1	158.76			5.46	4.20	2.15	0.30
ALCOVE	4	96		5	2389	55	8.7	5	0.11	2.89	1799	0.0047	4	356.7	167.57			14.13	6.53	2.75	0.30
ALCOVE	5	33		3	2149	55	8.7	5	0.11	2.89	1799	0.0047	5	-191.4	152.68			8.35	5.10	1.63	0.29
ALCOVE	6	47		2		55	8.7	5	0.11	2.89			6	-69.6	156.12			5.46	4.20		
ALCOVE	7	46		5		55	8.7	5	0.11	2.89			7	-78.3	155.87			14.13	6.53		
ALCOVE	8	67		5		55	8.7	5	0.11	2.89			8	104.4	160.89			14.13	6.53		
ALCOVE	9	60		3		55	8.7	5	0.11	2.89			9	43.5	159.24			8.35	5.10		
ALCOVE	10	50		7		55	8.7	5	0.11	2.89			10	-43.5	156.84			19.91	7.71		
ALCOVE	11	48		5		55	8.7	5	0.11	2.89			11	-60.9	156.36			14.13	6.53		
ALCOVE	12	49		8		55	8.7	5	0.11	2.89			12	-52.2	156.60			22.80	8.23		
ALCOVE	13	58		4		55	8.7	5	0.11	2.89			13	26.1	158.76			11.24	5.86		
ALCOVE	14	58		7		55	8.7	5	0.11	2.89			14	26.1	158.76			19.91	7.71		
ALCOVE	15	53		6		55	8.7	5	0.11	2.89			15	-17.4	157.56			17.02	7.14		
ALCOVE	16	44		5		55	8.7	5	0.11	2.89			16	-95.7	155.39			14.13	6.53		
ALCOVE	17	53		3		55	8.7	5	0.11	2.89			17	-17.4	157.56			8.35	5.10		
ALCOVE	18	63		8		55	8.7	5	0.11	2.89			18	69.6	159.95			22.80	8.23		
ALCOVE	19	43		4		55	8.7	5	0.11	2.89			19	-104.4	155.14			11.24	5.86		
ALCOVE	20	44		4		55	8.7	5	0.11	2.89			20	-95.7	155.39			11.24	5.86		

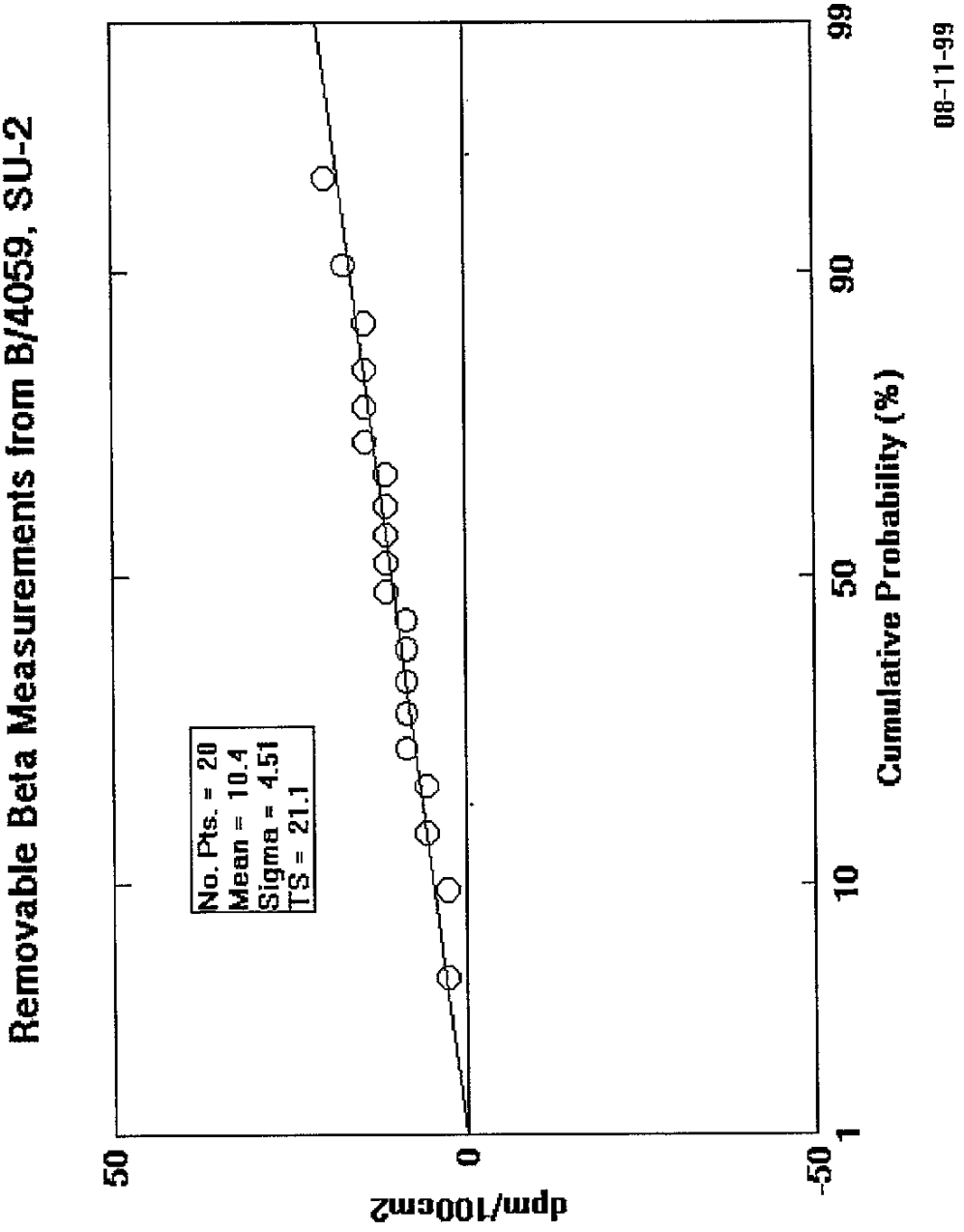
BUILDING 4059 CLASS I SURVEY UNIT 2 SIGN ANALYSIS
TOTAL BETA READINGS BSMT EAST WALL (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT EAST WALL	1	-696	5696	1
BASEMENT EAST WALL	2	-121	5121	1
BASEMENT EAST WALL	3	-182	5182	1
BASEMENT EAST WALL	4	-52	5052	1
BASEMENT EAST WALL	5	-182	5182	1
BASEMENT EAST WALL	6	-113	5113	1
BASEMENT EAST WALL	7	-43	5043	1
BASEMENT EAST WALL	8	78	4921	1
BASEMENT EAST WALL	9	-87	5087	1
BASEMENT EAST WALL	10	-78	5078	1
BASEMENT EAST WALL	11	-191	5191	1
BASEMENT EAST WALL	12	-69	5069	1
BASEMENT EAST WALL	13	-60	5060	1
BASEMENT EAST WALL	14	104.4	4895	1
BASEMENT EAST WALL	15	-34.8	5034	1
BASEMENT EAST WALL	16	-104.4	5104	1
BASEMENT EAST WALL	17	-52.2	5052	1
BASEMENT EAST WALL	18	104	4895	1
BASEMENT EAST WALL	19	-69	5069	1
BASEMENT EAST WALL	20	17	4982	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS I SURVEY UNIT 2 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT EAST WALL	1	19	980	1
BASEMENT EAST WALL	2	2	997	1
BASEMENT EAST WALL	3	5	994	1
BASEMENT EAST WALL	4	11	988	1
BASEMENT EAST WALL	5	11	988	1
BASEMENT EAST WALL	6	8	991	1
BASEMENT EAST WALL	7	5	994	1
BASEMENT EAST WALL	8	11	988	1
BASEMENT EAST WALL	9	2	997	1
BASEMENT EAST WALL	10	14	985	1
BASEMENT EAST WALL	11	11	988	1
BASEMENT EAST WALL	12	14	985	1
BASEMENT EAST WALL	13	14	985	1
BASEMENT EAST WALL	14	14	985	1
BASEMENT EAST WALL	15	17	982	1
BASEMENT EAST WALL	16	8	991	1
BASEMENT EAST WALL	17	8	991	1
BASEMENT EAST WALL	18	11	988	1
BASEMENT EAST WALL	19	8	991	1
BASEMENT EAST WALL	20	8	991	1
			TOTAL POSITIVES	20


Total Beta Measurements from B/4059, SU-2
No. Pts. = 20
Mean = -91.78
Sigma = 166
TS = 302
dpm/100cm2
600
300
0
-300
-600
-900
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-2
No. Pts. = 20
Mean = 10.4
Sigma = 4.51
TS = 21.1
dpm/100cm2
50
0
-50
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 CLASSI SU2 BSMT EAST WALL

SAMPLE AREA	GRID NO.	1 MIN BETA TOTAL	1 MIN BETA MAX	1 MIN BETA REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) MAX	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GA (u TOTAL
BSMT EAST WALL 5/3	1	37		7		53	8.7	5	0.11	2.89			1	-696.0	412.68			19.91	7.71	
BSMT EAST WALL 5/3	2	39		1		53	8.7	5	0.11	2.89			2	-121.8	151.69			2.57	3.04	
BSMT EAST WALL 5/3	3	32		2		53	8.7	5	0.11	2.89			3	-182.7	149.93			5.46	4.20	
BSMT EAST WALL 5/3	4	47		4		53	8.7	5	0.11	2.89			4	-52.2	153.67			11.24	5.86	
BSMT EAST WALL 5/3	5	32		4		53	8.7	5	0.11	2.89			5	-182.7	149.93			11.24	5.86	
BSMT EAST WALL 5/3	6	40		3		53	8.7	5	0.11	2.89			6	-113.1	151.94			8.35	5.10	
BSMT EAST WALL 5/3	7	48		2		53	8.7	5	0.11	2.89			7	-43.5	153.92			5.46	4.20	
BSMT EAST WALL 5/3	8	62		4		53	8.7	5	0.11	2.89			8	78.3	157.32			11.24	5.86	
BSMT EAST WALL 5/3	9	43		1		53	8.7	5	0.11	2.89			9	-87.0	152.68			2.57	3.04	
BSMT EAST WALL 5/3	10	44		5		53	8.7	5	0.11	2.89			10	-78.3	152.93			14.13	6.53	
BSMT EAST WALL 5/3	11	31		4		53	8.7	5	0.11	2.89			11	-191.4	149.66			11.24	5.86	
BSMT EAST WALL 5/3	12	45		5		53	8.7	5	0.11	2.89			12	-69.6	153.18			14.13	6.53	
BSMT EAST WALL 5/3	13	46		5		53	8.7	5	0.11	2.89			13	-60.9	153.43			14.13	6.53	
BSMT EAST WALL 5/3	14	65		5		53	8.7	5	0.11	2.89			14	104.4	158.04			14.13	6.53	
BSMT EAST WALL 5/3	15	49		6		53	8.7	5	0.11	2.89			15	-34.8	154.16			17.02	7.14	
BSMT EAST WALL 5/3	16	41		3		53	8.7	5	0.11	2.89			16	-104.4	152.19			8.35	5.10	
BSMT EAST WALL 5/3	17	47		3		53	8.7	5	0.11	2.89			17	-52.2	153.67			8.35	5.10	
BSMT EAST WALL 5/3	18	65		4		53	8.7	5	0.11	2.89			18	104.4	158.04			11.24	5.86	
BSMT EAST WALL 5/3	19	45		3		53	8.7	5	0.11	2.89			19	-69.6	153.18			8.35	5.10	
BSMT EAST WALL 5/3	20	55		3		53	8.7	5	0.11	2.89			20	17.4	155.63			8.35	5.10	

BUILDING 4059 CLASS I SURVEY UNIT 3 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT FLOOR	1	-163	5163	1
BASEMENT FLOOR	2	-32	5032	1
BASEMENT FLOOR	3	-58	5058	1
BASEMENT FLOOR	4	-102	5102	1
BASEMENT FLOOR	5	-93	5093	1
BASEMENT FLOOR	6	-58	5058	1
BASEMENT FLOOR	7	97	4902	1
BASEMENT FLOOR	8	-128	5128	1
BASEMENT FLOOR	9	-15	5015	1
BASEMENT FLOOR	10	-84	5084	1
BASEMENT FLOOR	11	-180	5180	1
BASEMENT FLOOR	12	-154	5154	1
BASEMENT FLOOR	13	37	4963	1
BASEMENT FLOOR	14	-50	5050	1
BASEMENT FLOOR	15	-93	5093	1
BASEMENT FLOOR	16	184	4815	1
BASEMENT FLOOR	17	54	4945	1
BASEMENT FLOOR	18	37	4963	1
BASEMENT FLOOR	19	-15	5015	1
BASEMENT FLOOR	20	-84	5084	1
			TOTAL POSITIVES	20

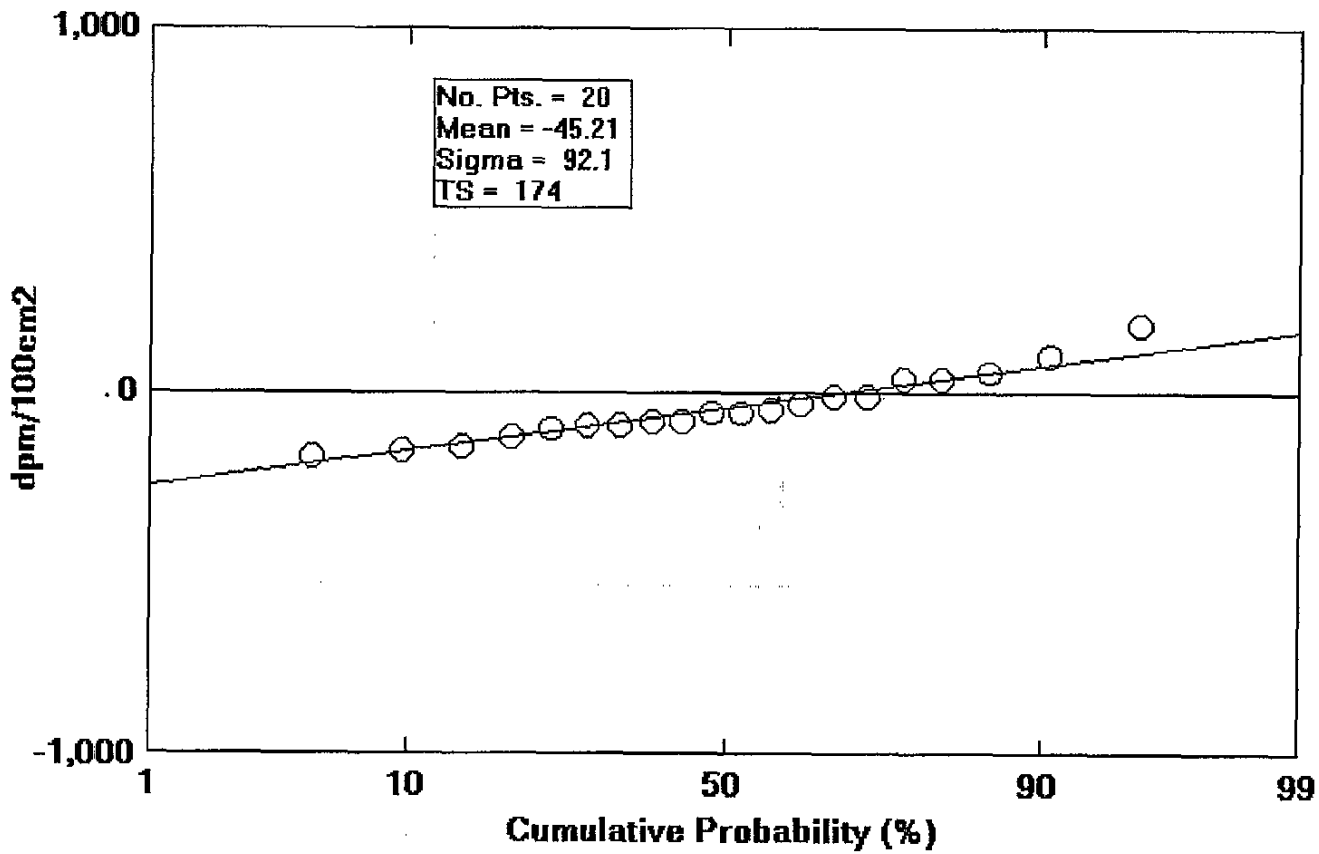
BUILDING 4059 CLASS I SURVEY UNIT 3 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT FLOOR	1	19	980	1
BASEMENT FLOOR	2	8	991	1
BASEMENT FLOOR	3	5	994	1
BASEMENT FLOOR	4	17	982	1
BASEMENT FLOOR	5	-0.3	1000	1
BASEMENT FLOOR	6	22	977	1
BASEMENT FLOOR	7	11	988	1
BASEMENT FLOOR	8	14	985	1
BASEMENT FLOOR	9	2	997	1
BASEMENT FLOOR	10	17	982	1
BASEMENT FLOOR	11	8	991	1
BASEMENT FLOOR	12	5	994	1
BASEMENT FLOOR	13	22	977	1
BASEMENT FLOOR	14	5	994	1
BASEMENT FLOOR	15	8	991	1
BASEMENT FLOOR	16	19	980	1
BASEMENT FLOOR	17	17	982	1
BASEMENT FLOOR	18	2	997	1
BASEMENT FLOOR	19	8	991	1
BASEMENT FLOOR	20	8	991	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS I SURVEY UNIT 3 SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT FLOOR	1	1.7	3.2	1
BASEMENT FLOOR	2	-1.3	6.3	1
BASEMENT FLOOR	3	-0.6	5.5	1
BASEMENT FLOOR	4	0.6	4.3	1
BASEMENT FLOOR	5	1.1	3.8	1
BASEMENT FLOOR	6	3.6	1.3	1
BASEMENT FLOOR	7	3.9	1.0	1
BASEMENT FLOOR	8	0.5	4.4	1
BASEMENT FLOOR	9	-0.3	5.3	1
BASEMENT FLOOR	10	-0.6	5.6	1
BASEMENT FLOOR	11	-0.8	5.8	1
BASEMENT FLOOR	12	-0.1	5.1	1
BASEMENT FLOOR	13	0.4	4.5	1
BASEMENT FLOOR	14	-0.6	5.6	1
BASEMENT FLOOR	15	1.2	3.7	1
BASEMENT FLOOR	16	-0.7	5.7	1
BASEMENT FLOOR	17	-0.3	5.3	1
BASEMENT FLOOR	18	-0.9	5.9	1
BASEMENT FLOOR	19	-0.4	5.4	1
BASEMENT FLOOR	20	-0.5	5.5	1
			TOTAL POSITIVES	20

Total Beta Measurements from B/4059, SU-3



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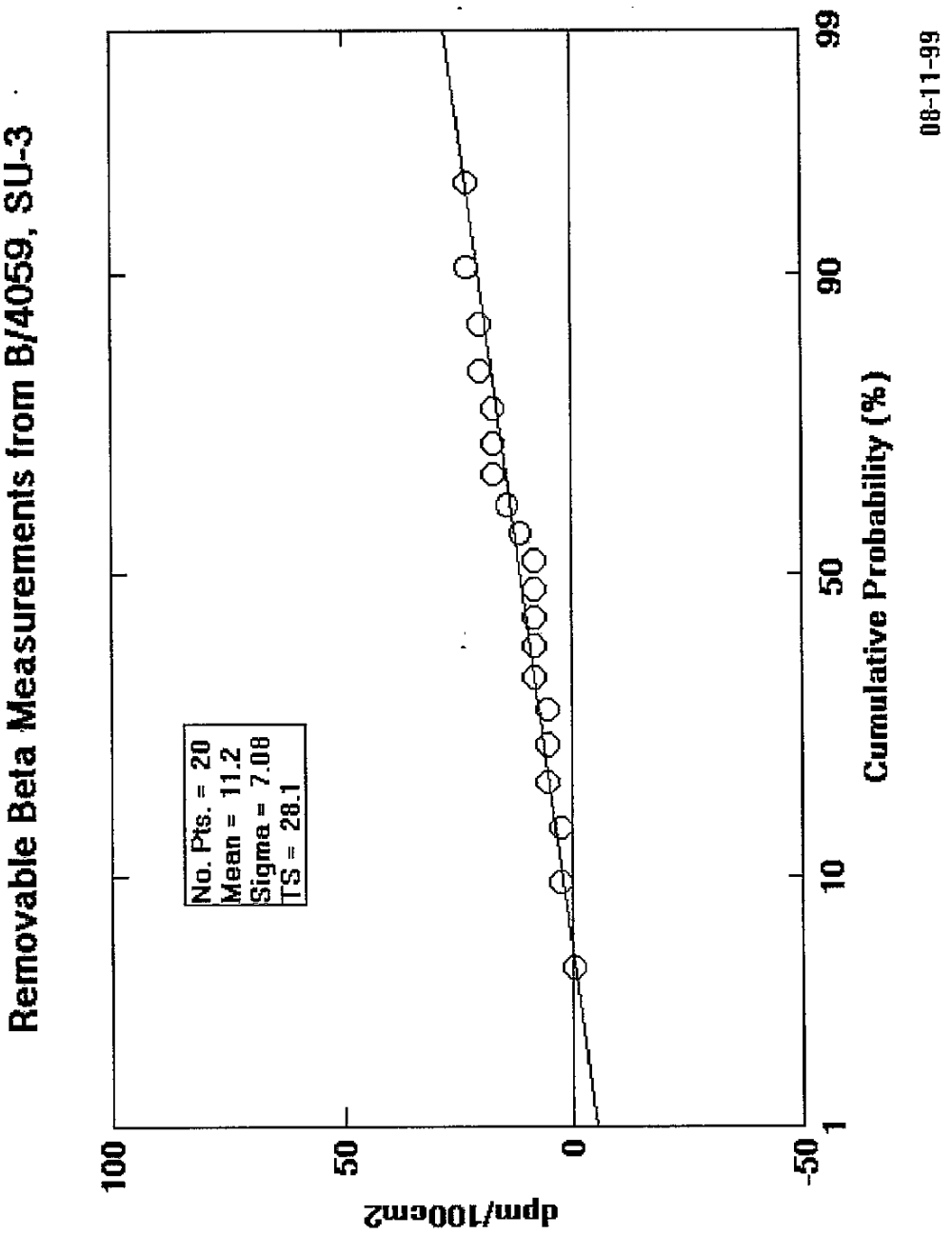
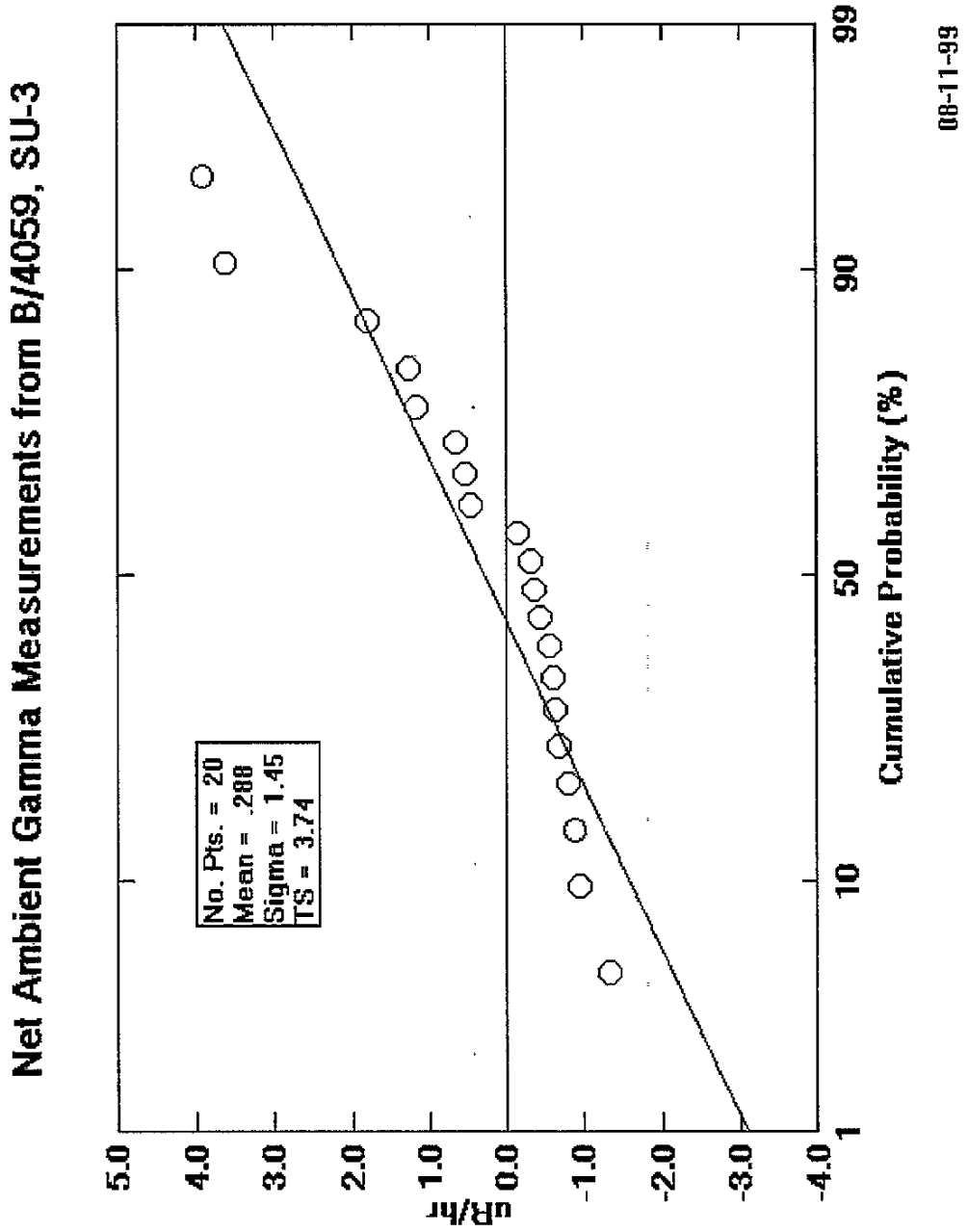

Removable Beta Measurements from B/4059, SU-3
No. Pts. = 20
Mean = 11.2
Sigma = 7.08
TS = 28.1
dpm/100cm2
100
50
0
-50
Cumulative Probability (%)
99
90
50
10
1
08-11-99


Net Ambient Gamma Measurements from B/4059, SU-3
No. Pts. = 20
Mean = .288
Sigma = 1.45
TS = 3.74
uR/hr
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 CLASS I SU3
BSMT FLOOR

SAMPLE AREA	GRID NO.	1 MIN BETA INSTRUMENT TOTAL	1 MIN BETA INSTRUMENT REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
BSMT FLOOR 4/30	1	45	7	2402	48.75	8.7	5	0.11	2.89	2016	0.0047	1	-163.1	421.19	19.91	7.71	1.79	0.31
BSMT FLOOR	2	45	3	1727	48.75	8.7	5	0.11	2.89	2016	0.0047	2	-32.6	147.84	8.35	5.10	-1.34	0.28
BSMT FLOOR	3	42	2	1887	48.75	8.7	5	0.11	2.89	2016	0.0047	3	-58.7	147.07	5.46	4.20	-0.60	0.29
BSMT FLOOR	4	37	6	2159	48.75	8.7	5	0.11	2.89	2016	0.0047	4	-102.2	145.77	17.02	7.14	0.66	0.30
BSMT FLOOR	5	38	0	2268	48.75	8.7	5	0.11	2.89	2016	0.0047	5	-93.5	146.03	-0.32	0.96	1.17	0.30
BSMT FLOOR	6	42	8	2796	48.75	8.7	5	0.11	2.89	2016	0.0047	6	-58.7	147.07	22.80	8.23	3.63	0.32
BSMT FLOOR	7	60	4	2859	48.75	8.7	5	0.11	2.89	2016	0.0047	7	97.9	151.63	11.24	5.86	3.92	0.32
BSMT FLOOR	8	34	5	2131	48.75	8.7	5	0.11	2.89	2016	0.0047	8	-128.3	144.99	14.13	6.53	0.53	0.30
BSMT FLOOR	9	47	1	1947	48.75	8.7	5	0.11	2.89	2016	0.0047	9	-15.2	148.35	2.57	3.04	-0.32	0.29
BSMT FLOOR	10	39	6	1880	48.75	8.7	5	0.11	2.89	2016	0.0047	10	-84.8	146.29	17.02	7.14	-0.63	0.29
BSMT FLOOR	11	28	3	1826	48.75	8.7	5	0.11	2.89	2016	0.0047	11	-180.5	143.42	8.35	5.10	-0.88	0.29
BSMT FLOOR	12	31	2	1985	48.75	8.7	5	0.11	2.89	2016	0.0047	12	-154.4	144.21	5.46	4.20	-0.14	0.29
BSMT FLOOR	13	53	8	2114	48.75	8.7	5	0.11	2.89	2016	0.0047	13	37.0	149.87	22.80	8.23	0.46	0.30
BSMT FLOOR	14	43	2	1870	48.75	8.7	5	0.11	2.89	2016	0.0047	14	-50.0	147.32	5.46	4.20	-0.68	0.29
BSMT FLOOR	15	38	3	2290	48.75	8.7	5	0.11	2.89	2016	0.0047	15	-93.5	146.03	8.35	5.10	1.27	0.31
BSMT FLOOR	16	70	7	1845	48.75	8.7	5	0.11	2.89	2016	0.0047	16	184.9	154.10	19.91	7.71	-0.80	0.29
BSMT FLOOR	17	55	6	1936	48.75	8.7	5	0.11	2.89	2016	0.0047	17	54.4	150.37	17.02	7.14	-0.37	0.29
BSMT FLOOR	18	53	1	1814	48.75	8.7	5	0.11	2.89	2016	0.0047	18	37.0	149.87	2.57	3.04	-0.94	0.29
BSMT FLOOR	19	47	3	1923	48.75	8.7	5	0.11	2.89	2016	0.0047	19	-15.2	148.35	8.35	5.10	-0.43	0.29
BSMT FLOOR	20	39	3	1897	48.75	8.7	5	0.11	2.89	2016	0.0047	20	-84.8	146.29	8.35	5.10	-0.55	0.29

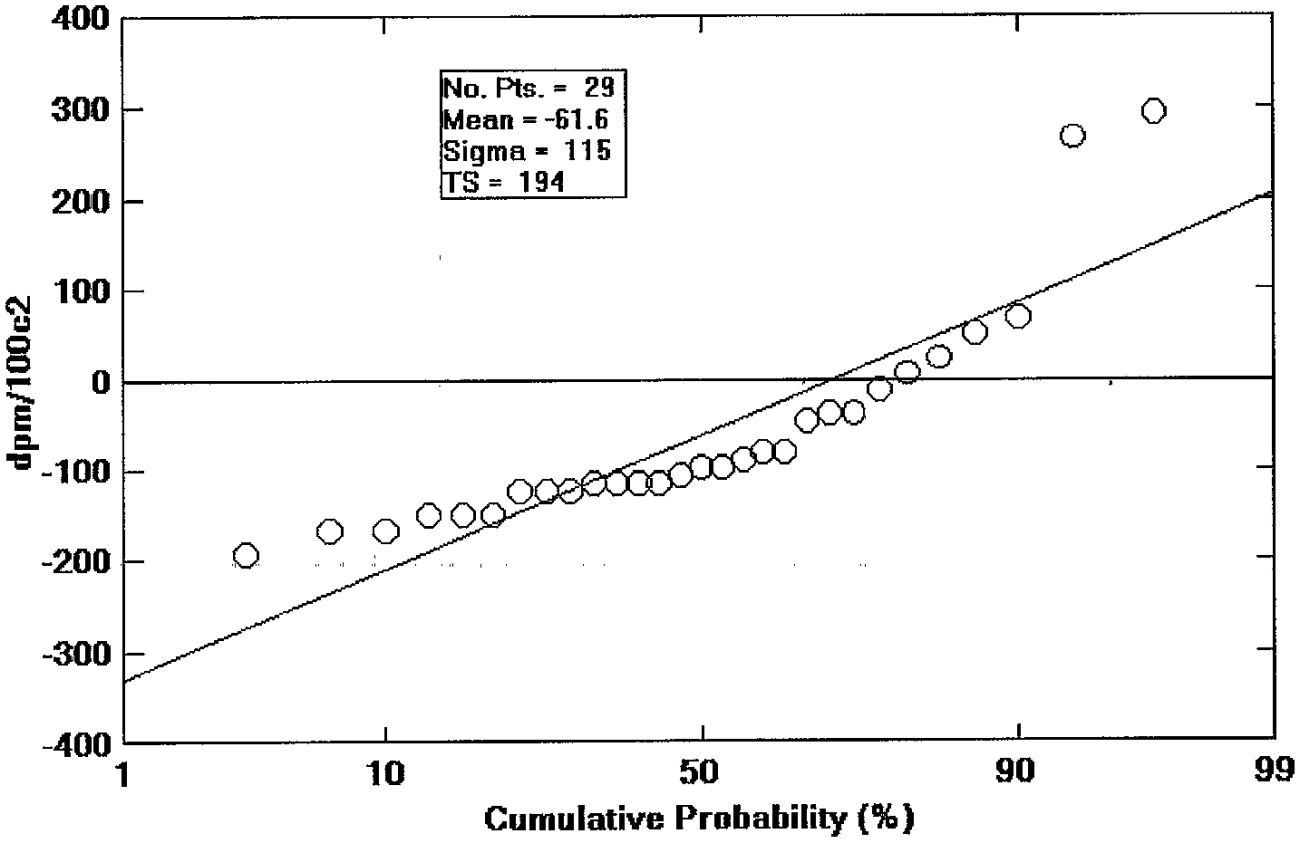
BUILDING 4059 CLASS I SURVEY UNIT 4 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT NORTH WALL	1	293	4706	1
BASEMENT NORTH WALL	2	267	4732	1
BASEMENT NORTH WALL	3	-97	5097	1
BASEMENT NORTH WALL	4	6	4993	1
BASEMENT NORTH WALL	5	-115	5115	1
BASEMENT NORTH WALL	6	-124	5123	1
BASEMENT NORTH WALL	7	-80	5080	1
BASEMENT NORTH WALL	8	-10	5010	1
BASEMENT NORTH WALL	9	-97	5097	1
BASEMENT NORTH WALL	10	-80	5080	1
BASEMENT NORTH WALL	11	-115	5115	1
BASEMENT NORTH WALL	12	23	4976	1
BASEMENT NORTH WALL	13	-150	5150	1
BASEMENT NORTH WALL	14	-150	5150	1
BASEMENT NORTH WALL	15	-115	5115	1
BASEMENT NORTH WALL	16	-89	5089	1
BASEMENT NORTH WALL	17	-45	5045	1
BASEMENT NORTH WALL	18	-106	5106	1
BASEMENT NORTH WALL	19	50	4949	1
BASEMENT NORTH WALL	20	-37	5036	1
BASEMENT NORTH WALL	21	67	4932	1
BASEMENT NORTH WALL	22	-115	5115	1
BASEMENT NORTH WALL	23	-123	5123	1
BASEMENT NORTH WALL	24	-150	5150	1
BASEMENT NORTH WALL	25	-167	5167	1
BASEMENT NORTH WALL	26	-123	5123	1
BASEMENT NORTH WALL	27	-193	5193	1
BASEMENT NORTH WALL	28	-36	5036	1
BASEMENT NORTH WALL	29	-167	5167	1
			TOTAL POSITIVES	29

BUILDING 4059 CLASS I SURVEY UNIT 4 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT NORTH WALL	1	16	983	1
BASEMENT NORTH WALL	2	19	980	1
BASEMENT NORTH WALL	3	11	988	1
BASEMENT NORTH WALL	4	16	983	1
BASEMENT NORTH WALL	5	14	985	1
BASEMENT NORTH WALL	6	5	994	1
BASEMENT NORTH WALL	7	2	997	1
BASEMENT NORTH WALL	8	2	997	1
BASEMENT NORTH WALL	9	-0.3	1000	1
BASEMENT NORTH WALL	10	11	988	1
BASEMENT NORTH WALL	11	-0.3	1000	1
BASEMENT NORTH WALL	12	31	968	1
BASEMENT NORTH WALL	13	5	994	1
BASEMENT NORTH WALL	14	19	980	1
BASEMENT NORTH WALL	15	25	974	1
BASEMENT NORTH WALL	16	2	997	1
BASEMENT NORTH WALL	17	11	988	1
BASEMENT NORTH WALL	18	2	997	1
BASEMENT NORTH WALL	19	14	985	1
BASEMENT NORTH WALL	20	5	994	1
BASEMENT NORTH WALL	21	11	988	1
BASEMENT NORTH WALL	22	5	994	1
BASEMENT NORTH WALL	23	11	988	1
BASEMENT NORTH WALL	24	16	983	1
BASEMENT NORTH WALL	25	8	991	1
BASEMENT NORTH WALL	26	2	997	1
BASEMENT NORTH WALL	27	11	988	1
BASEMENT NORTH WALL	28	14	985	1
BASEMENT NORTH WALL	29	5	994	1
			TOTAL POSITIVES	29

Total Beta Measurements from B/4059, SU-4



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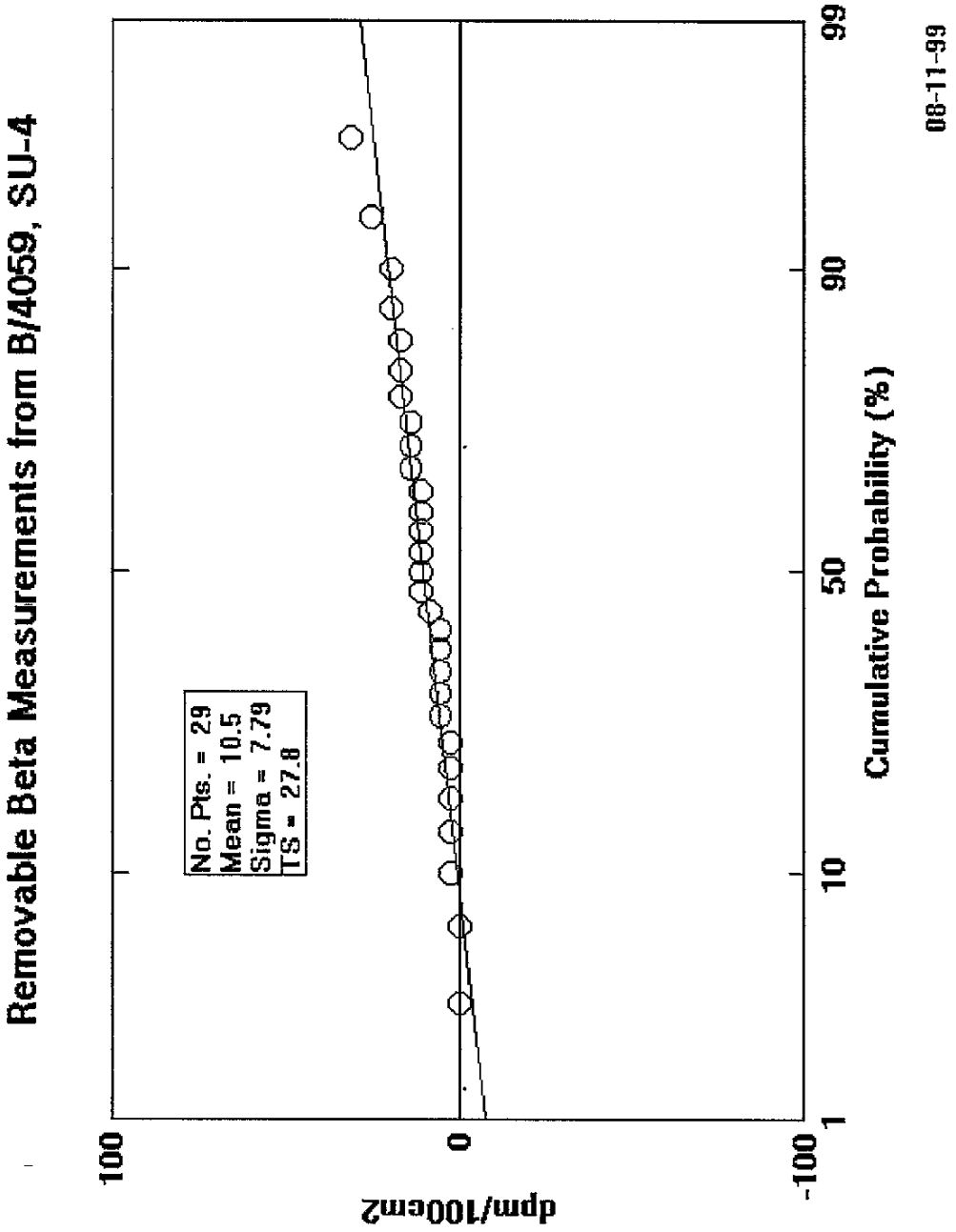

Removable Beta Measurements from B/4059, SU-4
No. Pts. = 29
Mean = 10.5
Sigma = 7.79
TS = 27.8
dpm/100cm2
100
0
-100
Cumulative Probability (%)
1
10
50
90
99
08-11-99

B/4059 CLASS I SU4
BSMT NORTH WALL

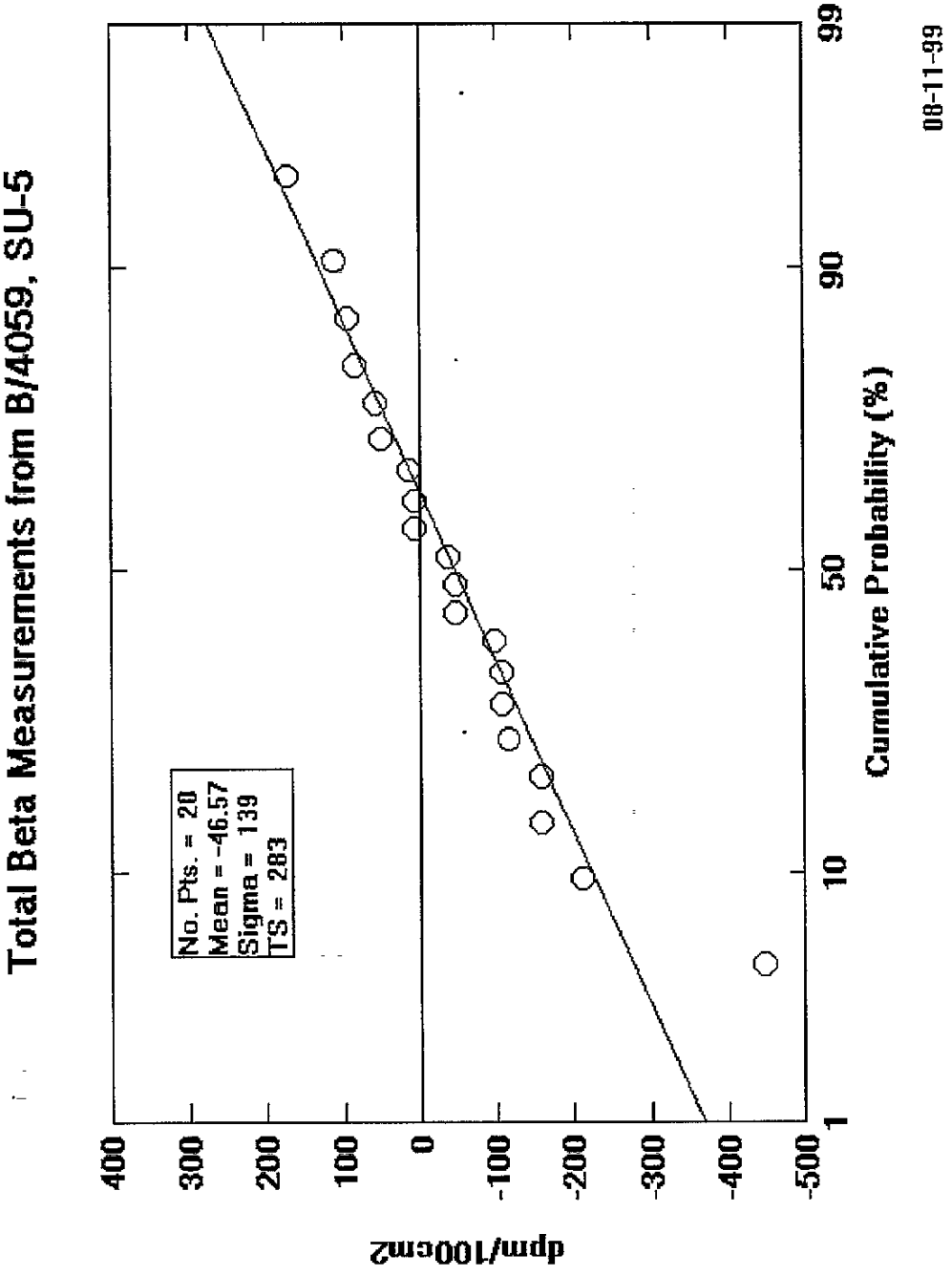
SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA SA BACKG	GAMMA SA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
BSMT N. WALL 5/1	1	60	6		53.25	8.7	5	0.13	2.89			1	293.6	462.92		16.96	7.16		
BSMT N. WALL 5/1	2	84	7		53.25	8.7	5	0.13	2.89			2	267.5	162.82		19.85	7.72		
BSMT N. WALL 5/1	3	42	4		53.25	8.7	5	0.13	2.89			3	-97.9	152.75		11.18	5.87		
BSMT N. WALL 5/1	4	54	6		53.25	8.7	5	0.13	2.89			4	6.5	155.69		16.96	7.16		
BSMT N. WALL 5/1	5	40	5		53.25	8.7	5	0.13	2.89			5	-115.3	152.25		14.07	6.55		
BSMT N. WALL 5/1	6	39	2		53.25	8.7	5	0.13	2.89			6	-124.0	152.00		5.40	4.22		
BSMT N. WALL 5/1	7	44	1		53.25	8.7	5	0.13	2.89			7	-80.5	153.24		2.51	3.07		
BSMT N. WALL 5/1	8	52	1		53.25	8.7	5	0.13	2.89			8	-10.9	155.20		2.51	3.07		
BSMT N. WALL 5/1	9	42	0		53.25	8.7	5	0.13	2.89			9	-97.9	152.75		-0.38	1.04		
BSMT N. WALL 5/1	10	44	4		53.25	8.7	5	0.13	2.89			10	-80.5	153.24		11.18	5.87		
BSMT N. WALL 5/1	11	40	0		53.25	8.7	5	0.13	2.89			11	-115.3	152.25		-0.38	1.04		
BSMT N. WALL 5/1	12	56	11		53.25	8.7	5	0.13	2.89			12	23.9	156.18		31.41	9.64		
BSMT N. WALL 5/1	13	36	2		53.25	8.7	5	0.13	2.89			13	-150.1	151.25		5.40	4.22		
BSMT N. WALL 5/1	14	36	7		53.25	8.7	5	0.13	2.89			14	-150.1	151.25		19.85	7.72		
BSMT N. WALL 5/1	15	40	9		53.25	8.7	5	0.13	2.89			15	-115.3	152.25		25.63	8.73		
BSMT N. WALL 5/1	16	43	1		53.25	8.7	5	0.13	2.89			16	-89.2	152.99		2.51	3.07		
BSMT N. WALL 5/1	17	48	4		53.25	8.7	5	0.13	2.89			17	-45.7	154.23		11.18	5.87		
BSMT N. WALL 5/1	18	41	1		53.25	8.7	5	0.13	2.89			18	-106.6	152.50		2.51	3.07		
BSMT N. WALL 5/1	19	59	5		53.25	8.7	5	0.13	2.89			19	50.0	156.90		14.07	6.55		
BSMT N. WALL 5/1	20	49	2		53.25	8.7	5	0.13	2.89			20	-37.0	154.47		5.40	4.22		
BSMT N. WALL 5/1	21	61	4		53.25	8.7	5	0.13	2.89			21	67.4	157.38		11.18	5.87		
BSMT N. WALL 5/1	22	40	2		53.25	8.7	5	0.13	2.89			22	-115.3	152.25		5.40	4.22		
BSMT N. WALL 5/1	23	39	4		53.25	8.7	5	0.13	2.89			23	-124.0	152.00		11.18	5.87		
BSMT N. WALL 5/1	24	36	6		53.25	8.7	5	0.13	2.89			24	-150.1	151.25		16.96	7.16		
BSMT N. WALL 5/1	25	34	3		53.25	8.7	5	0.13	2.89			25	-167.5	150.75		8.29	5.11		
BSMT N. WALL 5/1	26	39	1		53.25	8.7	5	0.13	2.89			26	-124.0	152.00		2.51	3.07		
BSMT N. WALL 5/1	27	31	4		53.25	8.7	5	0.13	2.89			27	-193.6	150.00		11.18	5.87		
BSMT N. WALL 5/1	28	49	5		53.25	8.7	5	0.13	2.89			28	-37.0	154.47		14.07	6.55		
BSMT N. WALL 5/1	29	34	2		53.25	8.7	5	0.13	2.89			29	-167.5	150.75		5.40	4.22		

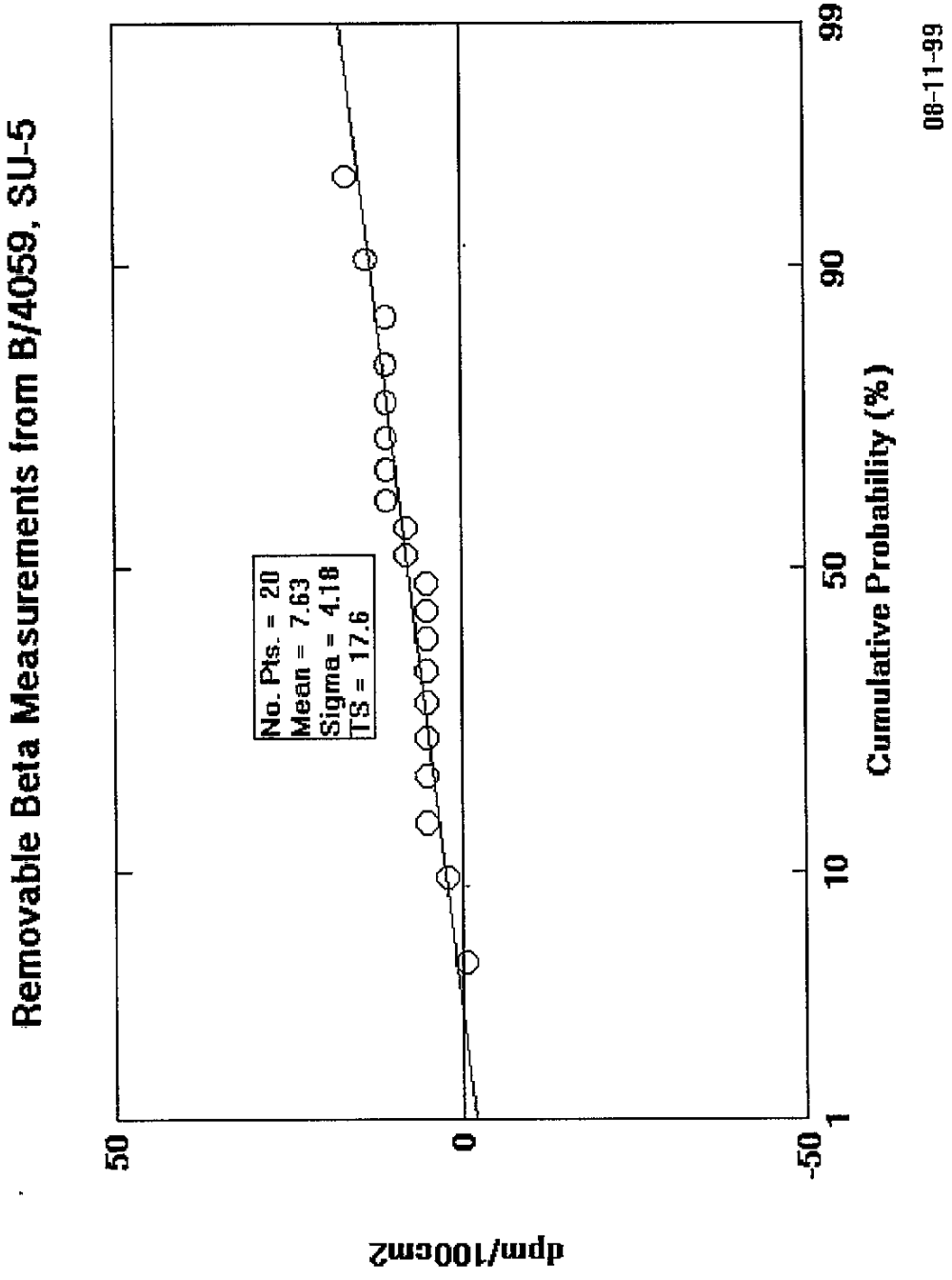
BUILDING 4059 CLASS I SURVEY UNIT 5 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT WEST WALL	1	-445	5445	1
BASEMENT WEST WALL	2	-158	5158	1
BASEMENT WEST WALL	3	58	4941	1
BASEMENT WEST WALL	4	-115	5115	1
BASEMENT WEST WALL	5	-45	5045	1
BASEMENT WEST WALL	6	-97	5097	1
BASEMENT WEST WALL	7	15	4984	1
BASEMENT WEST WALL	8	-158	5158	1
BASEMENT WEST WALL	9	-45	5045	1
BASEMENT WEST WALL	10	93	4906	1
BASEMENT WEST WALL	11	110	4889	1
BASEMENT WEST WALL	12	-37	5036	1
BASEMENT WEST WALL	13	-211	5210	1
BASEMENT WEST WALL	14	171	4828	1
BASEMENT WEST WALL	15	6	4993	1
BASEMENT WEST WALL	16	50	4949	1
BASEMENT WEST WALL	17	6	4993	1
BASEMENT WEST WALL	18	84	4915	1
BASEMENT WEST WALL	19	-106	5106	1
BASEMENT WEST WALL	20	-106	5106	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS I SURVEY UNIT 5 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT WEST WALL	1	5	994	1
BASEMENT WEST WALL	2	5	994	1
BASEMENT WEST WALL	3	10	989	1
BASEMENT WEST WALL	4	5	994	1
BASEMENT WEST WALL	5	5	994	1
BASEMENT WEST WALL	6	2	997	1
BASEMENT WEST WALL	7	5	994	1
BASEMENT WEST WALL	8	5	994	1
BASEMENT WEST WALL	9	10	989	1
BASEMENT WEST WALL	10	5	994	1
BASEMENT WEST WALL	11	7	992	1
BASEMENT WEST WALL	12	10	989	1
BASEMENT WEST WALL	13	16	983	1
BASEMENT WEST WALL	14	-0.7	1000	1
BASEMENT WEST WALL	15	7	992	1
BASEMENT WEST WALL	16	10	989	1
BASEMENT WEST WALL	17	5	994	1
BASEMENT WEST WALL	18	13	986	1
BASEMENT WEST WALL	19	10	989	1
BASEMENT WEST WALL	20	10	989	1
			TOTAL POSITIVES	20


Total Beta Measurements from B/4059, SU-5
No. Pts. = 20
Mean = -46.57
Sigma = 139
TS = 283
dpm/100cm2
400
300
200
100
0
-100
-200
-300
-400
-500
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-5
No. Pts. = 20
Mean = 7.63
Sigma = 4.18
TS = 17.6
50
0
-50
dpm/100cm2
99
90
50
10
1
Cumulative Probability (%)
08-11-99

B/4059 CLASS I SU5
BSMT WEST WALL

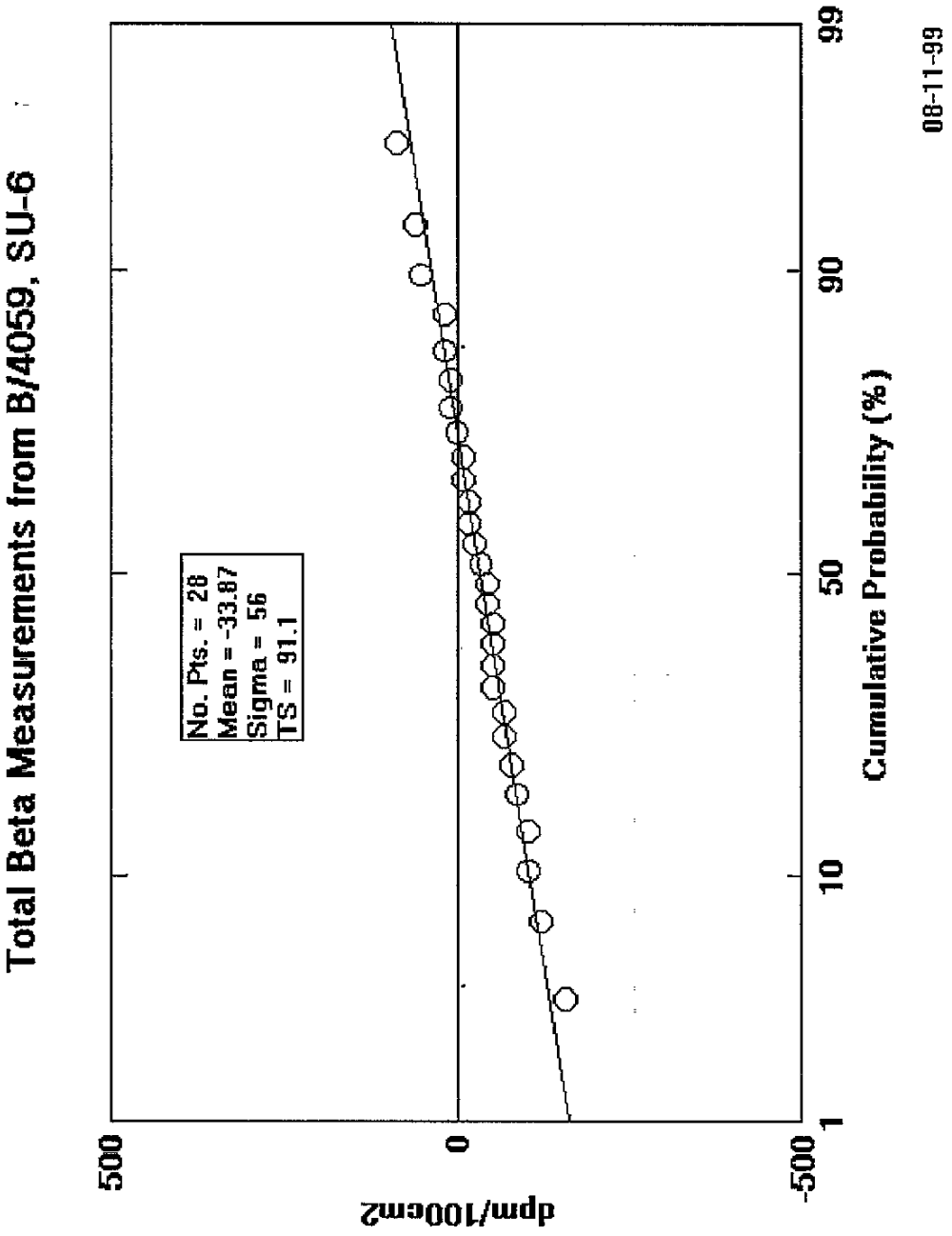
SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA STD DEV	BETA STD DE	BETA REM	BETA STD DEV	GAMMA (uR/hr) TOTAL	GAMMA STD DEV
BSMT N. WALL 5/14	1	43	2		53.25	8.7	5	0.26	2.89			1	-445.9	426.77		5.03	4.34		
BSMT N. WALL 5/14	2	35	2		53.25	8.7	5	0.26	2.89			2	-158.8	151.00		5.03	4.34		
BSMT N. WALL 5/14	3	60	4		53.25	8.7	5	0.26	2.89			3	58.7	157.14		10.81	5.96		
BSMT N. WALL 5/14	4	40	2		53.25	8.7	5	0.26	2.89			4	-115.3	152.25		5.03	4.34		
BSMT N. WALL 5/14	5	48	2		53.25	8.7	5	0.26	2.89			5	-45.7	154.23		5.03	4.34		
BSMT N. WALL 5/14	6	42	1		53.25	8.7	5	0.26	2.89			6	-97.9	152.75		2.14	3.24		
BSMT N. WALL 5/14	7	55	2		53.25	8.7	5	0.26	2.89			7	15.2	155.93		5.03	4.34		
BSMT N. WALL 5/14	8	35	2		53.25	8.7	5	0.26	2.89			8	-158.8	151.00		5.03	4.34		
BSMT N. WALL 5/14	9	48	4		53.25	8.7	5	0.26	2.89			9	-45.7	154.23		10.81	5.96		
BSMT N. WALL 5/14	10	64	2		53.25	8.7	5	0.26	2.89			10	93.5	158.10		5.03	4.34		
BSMT N. WALL 5/14	11	66	3		53.25	8.7	5	0.26	2.89			11	110.9	158.58		7.92	5.22		
BSMT N. WALL 5/14	12	49	4		53.25	8.7	5	0.26	2.89			12	-37.0	154.47		10.81	5.96		
BSMT N. WALL 5/14	13	29	6		53.25	8.7	5	0.26	2.89			13	-211.0	149.49		16.59	7.23		
BSMT N. WALL 5/14	14	73	0		53.25	8.7	5	0.26	2.89			14	171.8	160.24		-0.75	1.47		
BSMT N. WALL 5/14	15	54	3		53.25	8.7	5	0.26	2.89			15	6.5	155.69		7.92	5.22		
BSMT N. WALL 5/14	16	59	4		53.25	8.7	5	0.26	2.89			16	50.0	156.90		10.81	5.96		
BSMT N. WALL 5/14	17	54	2		53.25	8.7	5	0.26	2.89			17	6.5	155.69		5.03	4.34		
BSMT N. WALL 5/14	18	63	5		53.25	8.7	5	0.26	2.89			18	84.8	157.86		13.70	6.63		
BSMT N. WALL 5/14	19	41	4		53.25	8.7	5	0.26	2.89			19	-106.6	152.50		10.81	5.96		
BSMT N. WALL 5/14	20	41	4		53.25	8.7	5	0.26	2.89			20	-106.6	152.50		10.81	5.96		

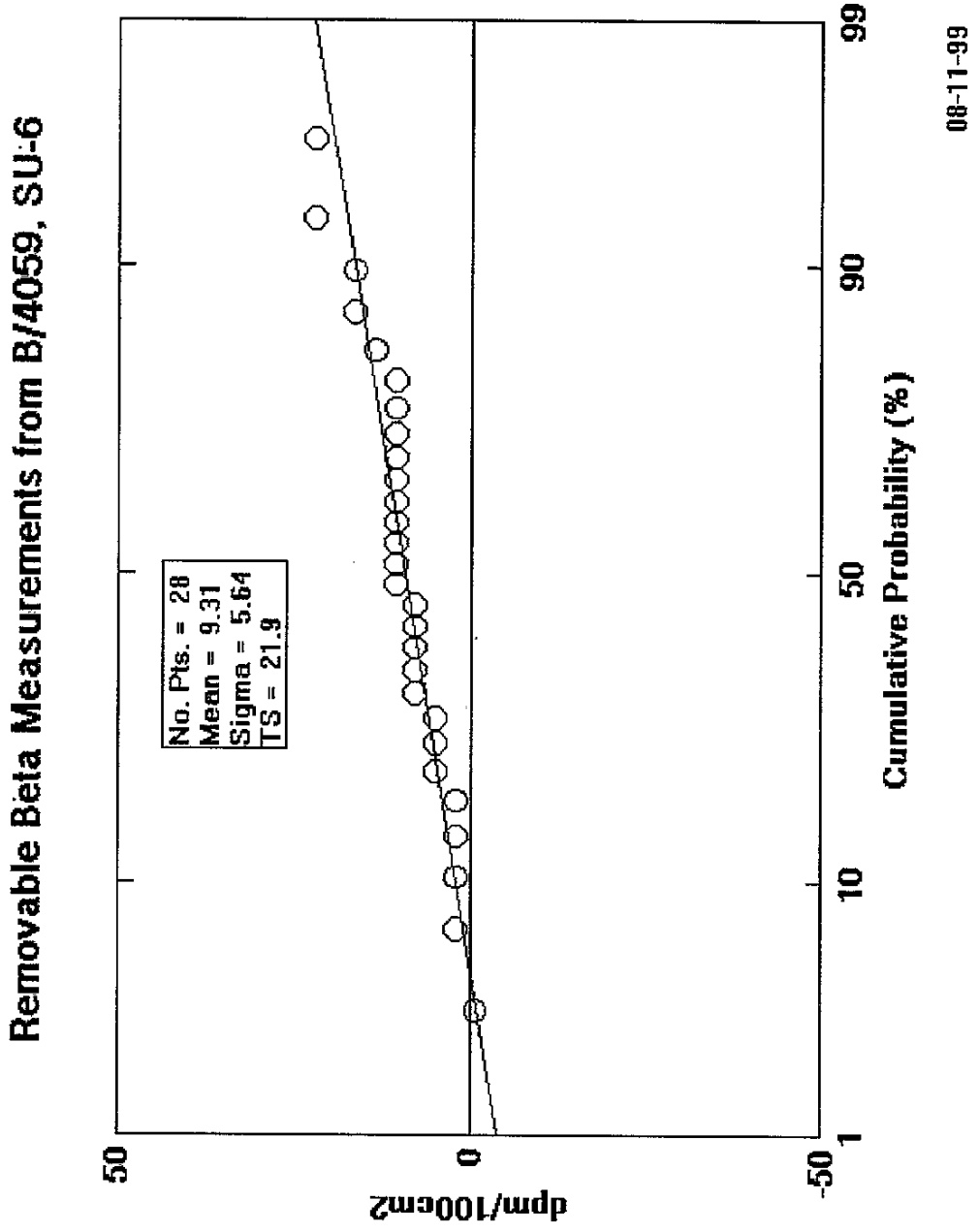
BUILDING 4059 CLASS I SURVEY UNIT 6 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT SOUTH WALL	1	87	4913	1
BASEMENT SOUTH WALL	2	-69	5069	1
BASEMENT SOUTH WALL	3	-69	5069	1
BASEMENT SOUTH WALL	4	-156	5156	1
BASEMENT SOUTH WALL	5	-52	5052	1
BASEMENT SOUTH WALL	6	-121	5121	1
BASEMENT SOUTH WALL	7	-8	5008	1
BASEMENT SOUTH WALL	8	-8	5008	1
BASEMENT SOUTH WALL	9	-104	5104	1
BASEMENT SOUTH WALL	10	-87	5087	1
BASEMENT SOUTH WALL	11	17	4982	1
BASEMENT SOUTH WALL	12	52	4947	1
BASEMENT SOUTH WALL	13	-43	5043	1
BASEMENT SOUTH WALL	14	8	4991	1
BASEMENT SOUTH WALL	15	0	5000	1
BASEMENT SOUTH WALL	16	8	4991	1
BASEMENT SOUTH WALL	17	17	4982	1
BASEMENT SOUTH WALL	18	-26	5026	1
BASEMENT SOUTH.WALL	19	-17	5017	1
BASEMENT SOUTH WALL	20	-52	5052	1
BASEMENT SOUTH WALL	21	-43	5043	1
BASEMENT SOUTH WALL	22	-78	5078	1
BASEMENT SOUTH WALL	23	60	4939	1
BASEMENT SOUTH WALL	24	-17	5017	1
BASEMENT SOUTH WALL	25	-34	5034	1
BASEMENT SOUTH WALL	26	-52	5052	1
BASEMENT SOUTH WALL	27	-52	5052	1
BASEMENT SOUTH WALL	28	-104	5104	1
			TOTAL POSITIVES	28

BUILDING 4059 CLASS I SURVEY UNIT 6 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT SOUTH WALL	1	7	992	1
BASEMENT SOUTH WALL	2	22	977	1
BASEMENT SOUTH WALL	3	7	992	1
BASEMENT SOUTH WALL	4	-0.8	1000	1
BASEMENT SOUTH WALL	5	2	997	1
BASEMENT SOUTH WALL	6	4	995	1
BASEMENT SOUTH WALL	7	10	989	1
BASEMENT SOUTH WALL	8	10	989	1
BASEMENT SOUTH WALL	9	10	989	1
BASEMENT SOUTH WALL	10	22	977	1
BASEMENT SOUTH WALL	11	16	983	1
BASEMENT SOUTH WALL	12	7	992	1
BASEMENT SOUTH WALL	13	2	997	1
BASEMENT SOUTH WALL	14	2	997	1
BASEMENT SOUTH WALL	15	10	989	1
BASEMENT SOUTH WALL	16	7	992	1
BASEMENT SOUTH WALL	17	16	983	1
BASEMENT SOUTH WALL	18	10	989	1
BASEMENT SOUTH WALL	19	13	986	1
BASEMENT SOUTH WALL	20	10	989	1
BASEMENT SOUTH WALL	21	10	989	1
BASEMENT SOUTH WALL	22	2	997	1
BASEMENT SOUTH WALL	23	4	995	1
BASEMENT SOUTH WALL	24	10	989	1
BASEMENT SOUTH WALL	25	10	989	1
BASEMENT SOUTH WALL	26	4	995	1
BASEMENT SOUTH WALL	27	10	989	1
BASEMENT SOUTH WALL	28	7	992	1
			TOTAL POSITIVES	28


Total Beta Measurements from B/4059, SU-6
No. Pts. = 28
Mean = -33.87
Sigma = 56
TS = 91.1
dpm/100cm2
500
0
-500
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-6
No. Pts. = 28
Mean = 9.31
Sigma = 5.64
TS = 21.9
dpm/100cm2
50
0
-50
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 SU6 CLASS I
BSMT SOUTH WALL

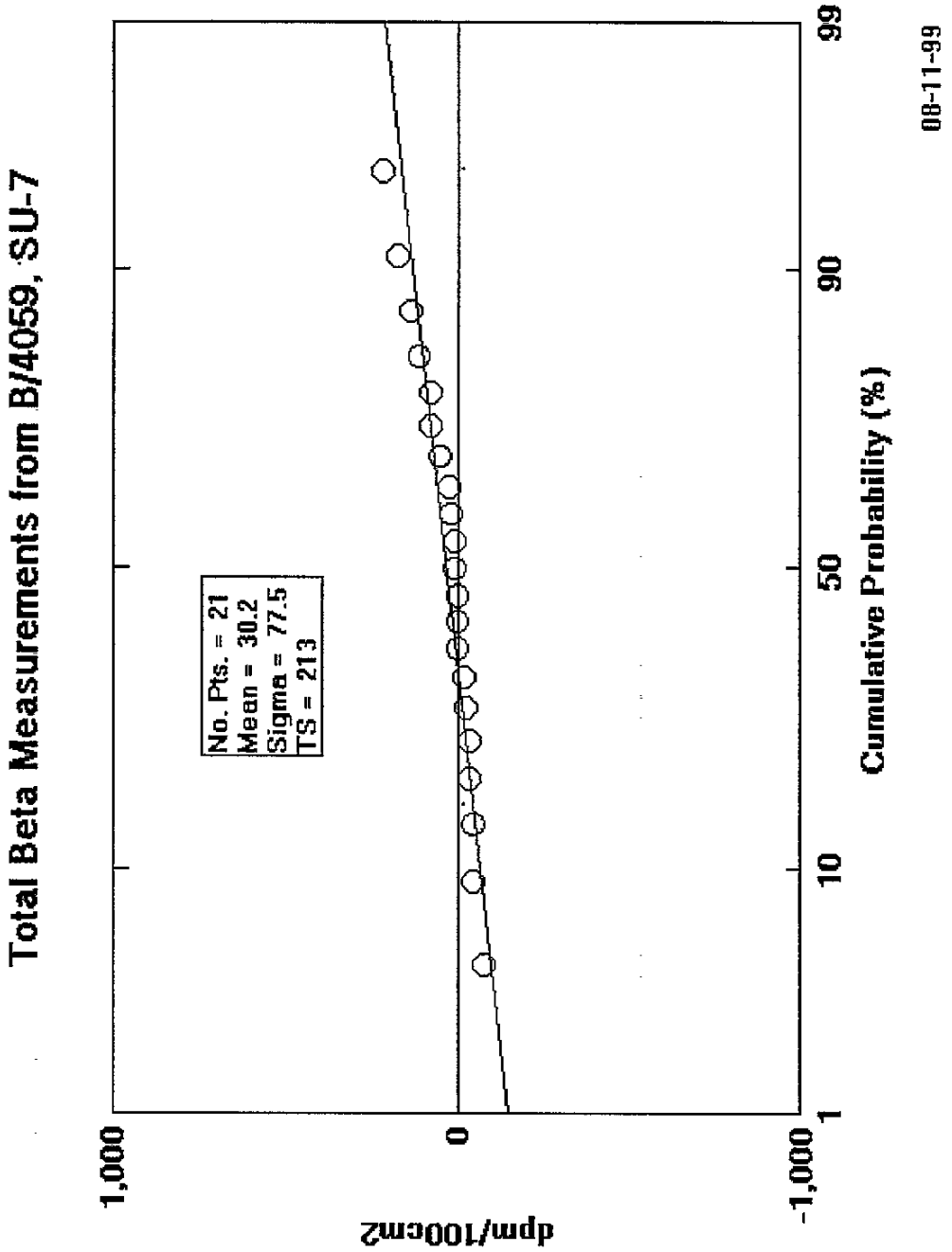
SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
BSMT S. WALL 5/3	1	55	3		53	8.7	5	0.28	2.89			1	87.0	452.07		7.86	5.23		
BSMT S. WALL 5/3	2	45	8		53	8.7	5	0.28	2.89			2	-69.6	153.18		22.31	8.32		
BSMT S. WALL 5/3	3	45	3		53	8.7	5	0.28	2.89			3	-69.6	153.18		7.86	5.23		
BSMT S. WALL 5/3	4	35	0		53	8.7	5	0.28	2.89			4	-156.6	150.69		-0.81	1.53		
BSMT S. WALL 5/3	5	47	1		53	8.7	5	0.28	2.89			5	-52.2	153.67		2.08	3.27		
BSMT S. WALL 5/3	6	39	2		53	8.7	5	0.28	2.89			6	-121.8	151.69		4.97	4.36		
BSMT S. WALL 5/3	7	52	4		53	8.7	5	0.28	2.89			7	-8.7	154.90		10.75	5.98		
BSMT S. WALL 5/3	8	52	4		53	8.7	5	0.28	2.89			8	-8.7	154.90		10.75	5.98		
BSMT S. WALL 5/3	9	41	4		53	8.7	5	0.28	2.89			9	-104.4	152.19		10.75	5.98		
BSMT S. WALL 5/3	10	43	8		53	8.7	5	0.28	2.89			10	-87.0	152.68		22.31	8.32		
BSMT S. WALL 5/3	11	55	6		53	8.7	5	0.28	2.89			11	17.4	155.63		16.53	7.24		
BSMT S. WALL 5/3	12	59	3		53	8.7	5	0.28	2.89			12	52.2	156.60		7.86	5.23		
BSMT S. WALL 5/3	13	48	1		53	8.7	5	0.28	2.89			13	-43.5	153.92		2.08	3.27		
BSMT S. WALL 5/3	14	54	1		53	8.7	5	0.28	2.89			14	8.7	155.39		2.08	3.27		
BSMT S. WALL 5/3	15	53	4		53	8.7	5	0.28	2.89			15	0.0	155.14		10.75	5.98		
BSMT S. WALL 5/3	16	54	3		53	8.7	5	0.28	2.89			16	8.7	155.39		7.86	5.23		
BSMT S. WALL 5/3	17	55	6		53	8.7	5	0.28	2.89			17	17.4	155.63		16.53	7.24		
BSMT S. WALL 5/3	18	50	4		53	8.7	5	0.28	2.89			18	-26.1	154.41		10.75	5.98		
BSMT S. WALL 5/3	19	51	5		53	8.7	5	0.28	2.89			19	-17.4	154.65		13.64	6.64		
BSMT S. WALL 5/3	20	47	4		53	8.7	5	0.28	2.89			20	-52.2	153.67		10.75	5.98		
BSMT S. WALL 5/3	21	48	4		53	8.7	5	0.28	2.89			21	-43.5	153.92		10.75	5.98		
BSMT S. WALL 5/3	22	44	1		53	8.7	5	0.28	2.89			22	-78.3	152.93		2.08	3.27		
BSMT S. WALL 5/3	23	60	2		53	8.7	5	0.28	2.89			23	60.9	156.84		4.97	4.36		
BSMT S. WALL 5/3	24	51	4		53	8.7	5	0.28	2.89			24	-17.4	154.65		10.75	5.98		
BSMT S. WALL 5/3	25	49	4		53	8.7	5	0.28	2.89			25	-34.8	154.16		10.75	5.98		
BSMT S. WALL 5/3	26	47	2		53	8.7	5	0.28	2.89			26	-52.2	153.67		4.97	4.36		
BSMT S. WALL 5/3	27	47	4		53	8.7	5	0.28	2.89			27	-52.2	153.67		10.75	5.98		
BSMT S. WALL 5/3	28	41	3		53	8.7	5	0.28	2.89			28	-104.4	152.19		7.86	5.23		

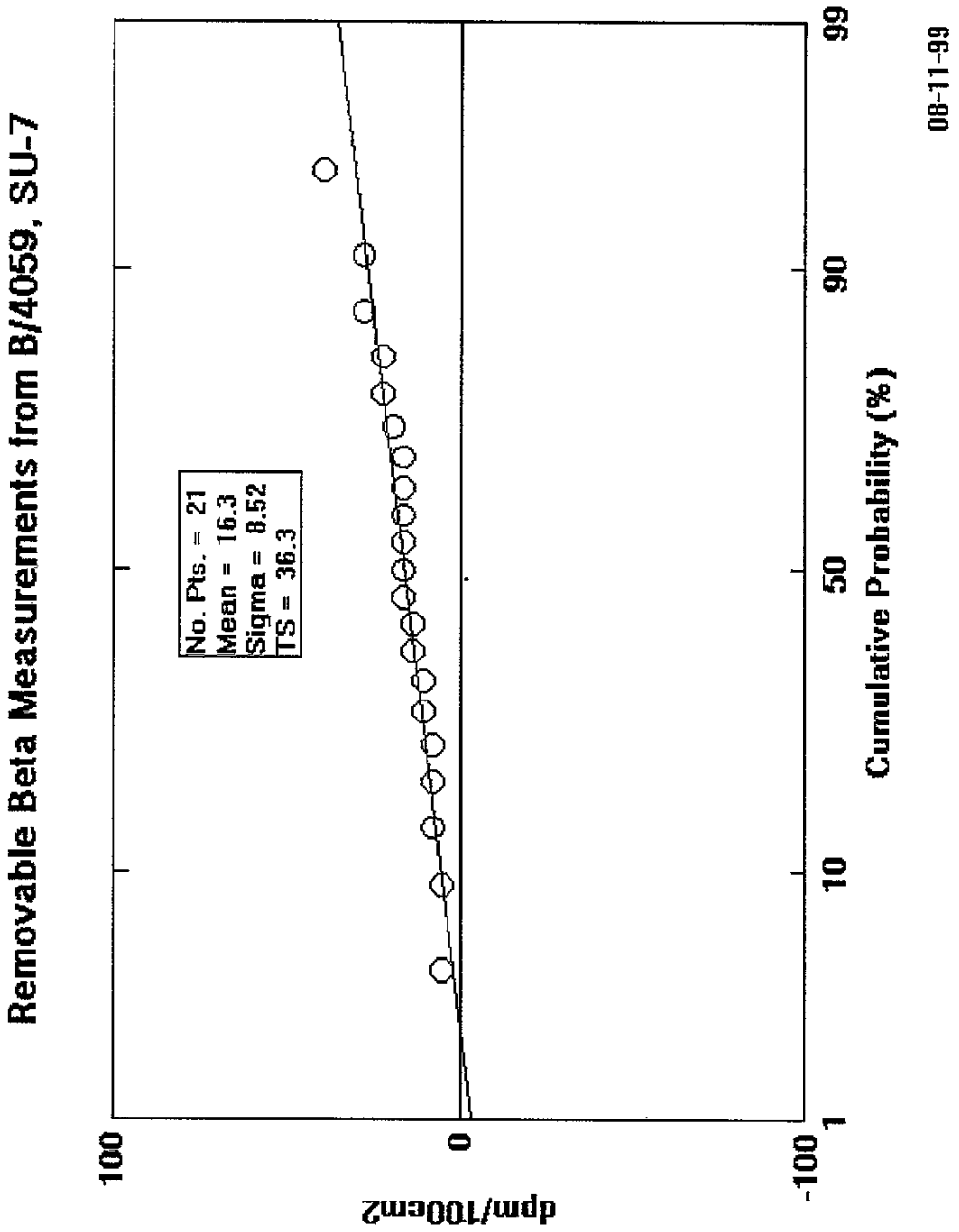
BUILDING 4059 CLASS I SURVEY UNIT 7 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT CEILING	1	217	4782	1
BASEMENT CEILING	2	0	5000	1
BASEMENT CEILING	3	-43	5043	1
BASEMENT CEILING	4	174	4826	1
BASEMENT CEILING	5	-34	5034	1
BASEMENT CEILING	6	-43	5043	1
BASEMENT CEILING	7	8	4991	1
BASEMENT CEILING	8	52	4947	1
BASEMENT CEILING	9	-78	5078	1
BASEMENT CEILING	10	8	4991	1
BASEMENT CEILING	11	78	4921	1
BASEMENT CEILING	12	113	4886	1
BASEMENT CEILING	13	139	4860	1
BASEMENT CEILING	14	78	4921	1
BASEMENT CEILING	15	-34	5034	1
BASEMENT CEILING	16	0	5000	1
BASEMENT CEILING	17	0	5000	1
BASEMENT CEILING	18	17	4982	1
BASEMENT CEILING	19	-17	5017	1
BASEMENT CEILING	20	26	4973	
BASEMENT CEILING	21	-26	5026	1
			TOTAL POSITIVES	21

BUILDING 4059 CLASS I SURVEY UNIT 7 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
BASEMENT CEILING	1	16	983	1
BASEMENT CEILING	2	7	992	1
BASEMENT CEILING	3	16	983	1
BASEMENT CEILING	4	16	983	1
BASEMENT CEILING	5	19	980	1
BASEMENT CEILING	6	7	992	1
BASEMENT CEILING	7	22	977	1
BASEMENT CEILING	8	13	986	1
BASEMENT CEILING	9	16	983	1
BASEMENT CEILING	10	7	992	1
BASEMENT CEILING	11	4	995	1
BASEMENT CEILING	12	16	983	1
BASEMENT CEILING	13	10	989	1
BASEMENT CEILING	14	4	995	1
BASEMENT CEILING	15	10	989	1
BASEMENT CEILING	16	13	986	1
BASEMENT CEILING	17	28	971	1
BASEMENT CEILING	18	16	983	1
BASEMENT CEILING	19	22	977	1
BASEMENT CEILING	20	28	971	1
BASEMENT CEILING	21	39	960	1
			TOTAL POSITIVES	21


Total Beta Measurements from B/4059, SU-7
No. Pts. = 21
Mean = 30.2
Sigma = 77.5
TS = 213
1,000
0
-1,000
dpm/100cm2
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-7
No. Pts. = 21
Mean = 16.3
Sigma = 8.52
TS = 36.3
dpm/100cm2
100
0
-100
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 SU7
BSMT CEILING

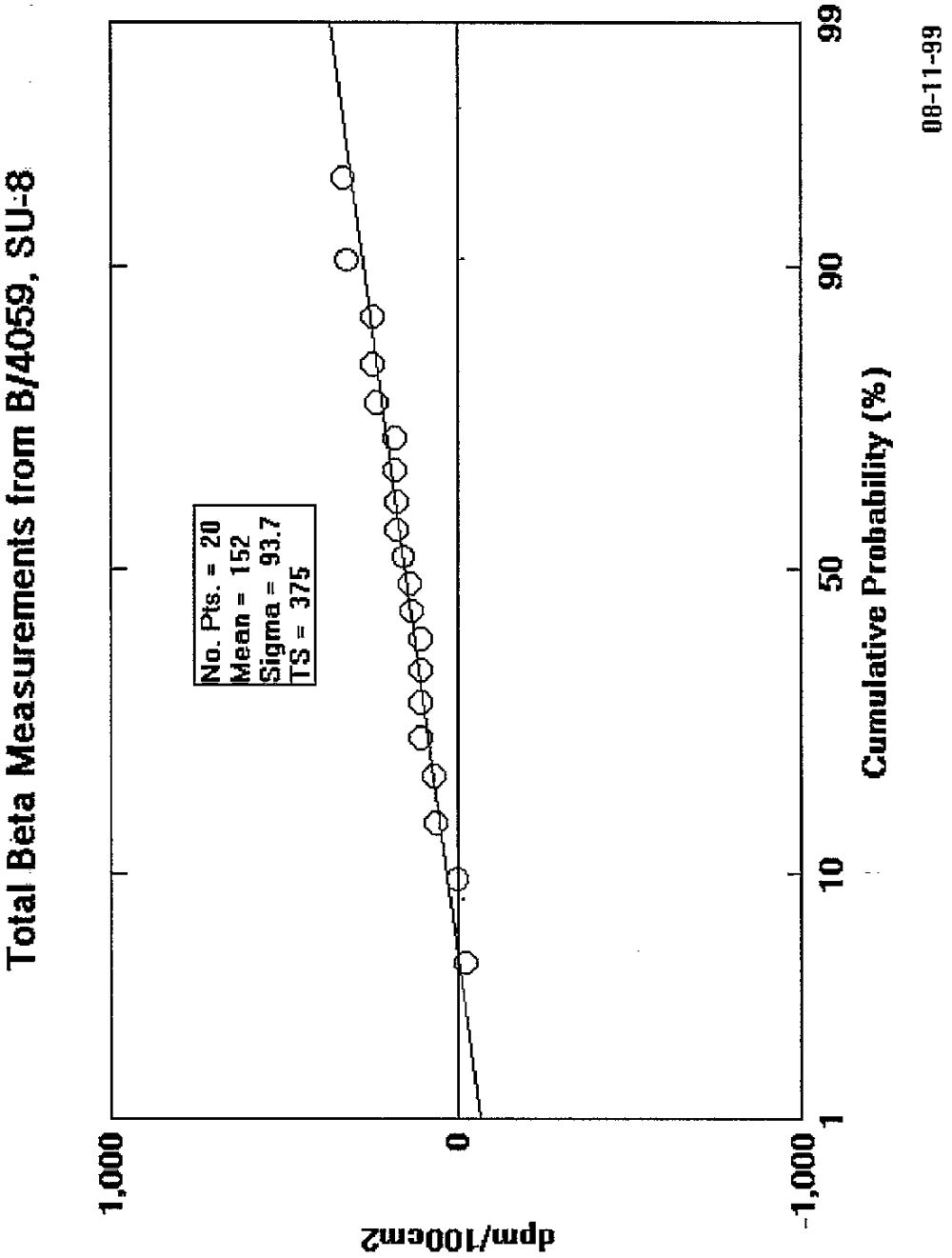
SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
BSMT CEILING 5/3-4	1	60	6		55	8.7	5	0.28	2.89			1	217.5	466.49		16.53	7.24		
BSMT CEILING 5/3-4	2	55	3		55	8.7	5	0.28	2.89			2	0.0	158.04		7.86	5.23		
BSMT CEILING 5/3-4	3	50	6		55	8.7	5	0.28	2.89			3	-43.5	156.84		16.53	7.24		
BSMT CEILING 5/3-4	4	75	6		55	8.7	5	0.28	2.89			4	174.0	162.76		16.53	7.24		
BSMT CEILING 5/3-4	5	51	7		55	8.7	5	0.28	2.89			5	-34.8	157.08		19.42	7.80		
BSMT CEILING 5/3-4	6	50	3		55	8.7	5	0.28	2.89			6	-43.5	156.84		7.86	5.23		
BSMT CEILING 5/3-4	7	56	8		55	8.7	5	0.28	2.89			7	8.7	158.28		22.31	8.32		
BSMT CEILING 5/3-4	8	61	5		55	8.7	5	0.28	2.89			8	52.2	159.47		13.64	6.64		
BSMT CEILING 5/3-4	9	46	6		55	8.7	5	0.28	2.89			9	-78.3	155.87		16.53	7.24		
BSMT CEILING 5/3-4	10	56	3		55	8.7	5	0.28	2.89			10	8.7	158.28		7.86	5.23		
BSMT CEILING 5/3-4	11	64	2		55	8.7	5	0.28	2.89			11	78.3	160.18		4.97	4.36		
BSMT CEILING 5/3-4	12	68	6		55	8.7	5	0.28	2.89			12	113.1	161.13		16.53	7.24		
BSMT CEILING 5/3-4	13	71	4		55	8.7	5	0.28	2.89			13	139.2	161.83		10.75	5.98		
BSMT CEILING 5/3-4	14	64	2		55	8.7	5	0.28	2.89			14	78.3	160.18		4.97	4.36		
BSMT CEILING 5/3-4	15	51	4		55	8.7	5	0.28	2.89			15	-34.8	157.08		10.75	5.98		
BSMT CEILING 5/3-4	16	55	5		55	8.7	5	0.28	2.89			16	0.0	158.04		13.64	6.64		
BSMT CEILING 5/3-4	17	55	10		55	8.7	5	0.28	2.89			17	0.0	158.04		28.09	9.27		
BSMT CEILING 5/3-4	18	57	6		55	8.7	5	0.28	2.89			18	17.4	158.52		16.53	7.24		
BSMT CEILING 5/3-4	19	53	8		55	8.7	5	0.28	2.89			19	-17.4	157.56		22.31	8.32		
BSMT CEILING 5/3-4	20	58	10		55	8.7	5	0.28	2.89			20	26.1	158.76		28.09	9.27		
BSMT CEILING 5/3-4	21	52	14		55	8.7	5	0.28	2.89			21	-26.1	157.32		39.65	10.92		

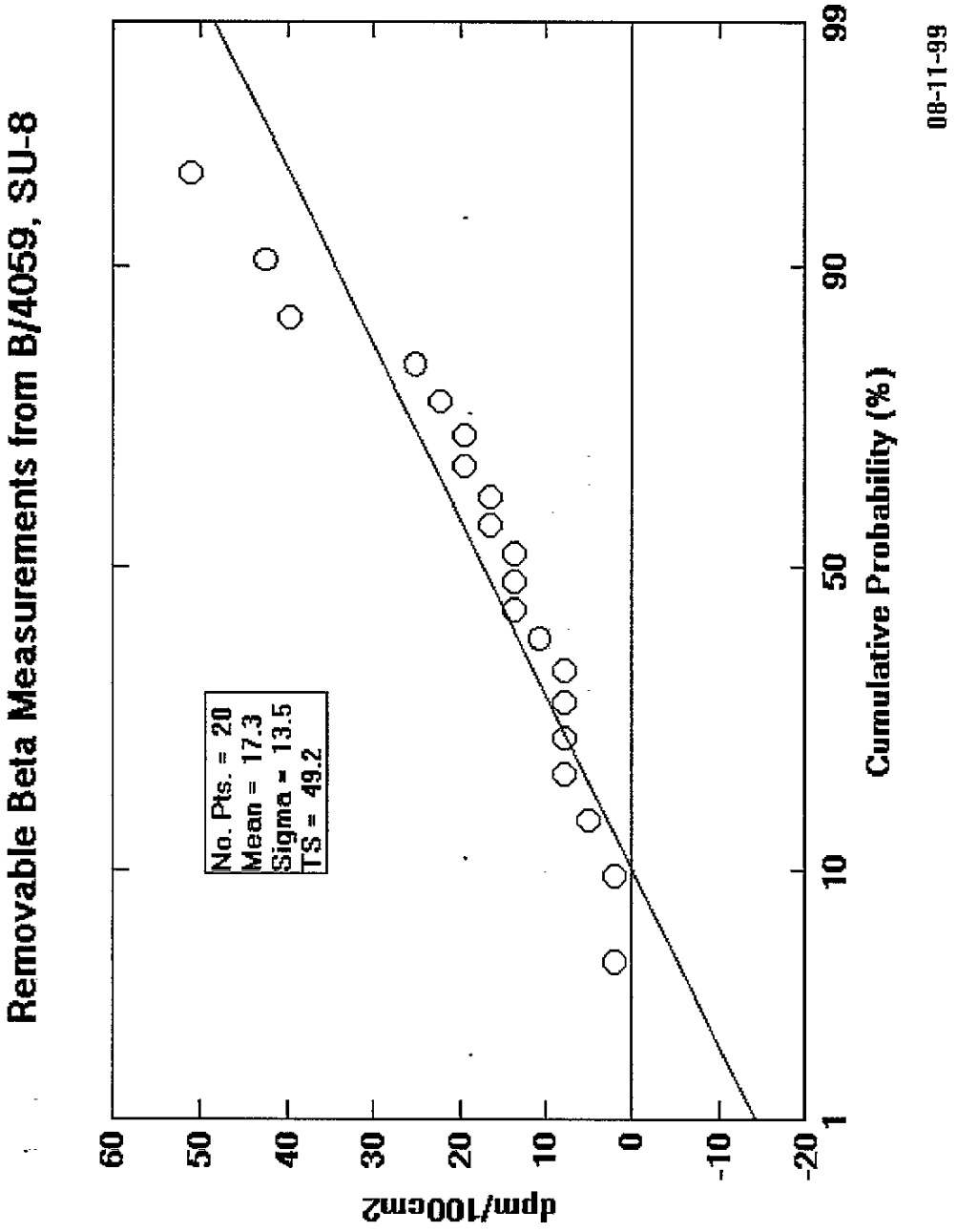
BUILDING 4059 CLASS I SURVEY UNIT 8 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER CEILING & WEST WALL	1	174	4826	1
VER CEILING & WEST WALL	2	69	4930	1
VER CEILING & WEST WALL	3	182.7	4817	1
VER CEILING & WEST WALL	4	0	5000	1
VER CEILING & WEST WALL	5	156	4843	1
VER CEILING & WEST WALL	6	104	4895	1
VER CEILING & WEST WALL	7	60	4939	1
VER CEILING & WEST WALL	8	104	4895	1
VER CEILING & WEST WALL	9	182	4817	1
VER CEILING & WEST WALL	10	104	4895	1
VER CEILING & WEST WALL	11	330	4669	1
VER CEILING & WEST WALL	12	139	4860	1
VER CEILING & WEST WALL	13	234	4765	1
VER CEILING & WEST WALL	14	243	4756	1
VER CEILING & WEST WALL	15	104	4895	1
VER CEILING & WEST WALL	16	130	4869	1
VER CEILING & WEST WALL	17	321	4678	1
VER CEILING & WEST WALL	18	243	4756	1
VER CEILING & WEST WALL	19	174	4826	1
VER CEILING & WEST WALL	20	-26	5026	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS I SURVEY UNIT 8 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER CEILING & WEST WALL	1	7	992	1
VER CEILING & WEST WALL	2	39	960	1
VER CEILING & WEST WALL	3	2	997	1
VER CEILING & WEST WALL	4	4	995	1
VER CEILING & WEST WALL	5	51	948	1
VER CEILING & WEST WALL	6	19	980	1
VER CEILING & WEST WALL	7	13	986	1
VER CEILING & WEST WALL	8	16	983	1
VER CEILING & WEST WALL	9	10	989	1
VER CEILING & WEST WALL	10	19	980	1
VER CEILING & WEST WALL	11	25	974	1
VER CEILING & WEST WALL	12	7	992	1
VER CEILING & WEST WALL	13	42	957	1
VER CEILING & WEST WALL	14	16	983	1
VER CEILING & WEST WALL	15	22	977	1
VER CEILING & WEST WALL	16	13	986	1
VER CEILING & WEST WALL	17	7	992	1
VER CEILING & WEST WALL	18	13	986	1
VER CEILING & WEST WALL	19	2	997	1
VER CEILING & WEST WALL	20	7	992	1
			TOTAL POSITIVES	20


Total Beta Measurements from B/4059, SU-8
No. Pts. = 20
Mean = 152
Sigma = 93.7
TS = 375
1,000
0
-1,000
dpm/100cm2
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-8
No. Pts. = 20
Mean = 17.3
Sigma = 13.5
TS = 49.2
dpm/100cm2
60
50
40
30
20
10
0
-10
-20
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 SU8
VER CEILING, W. WALL

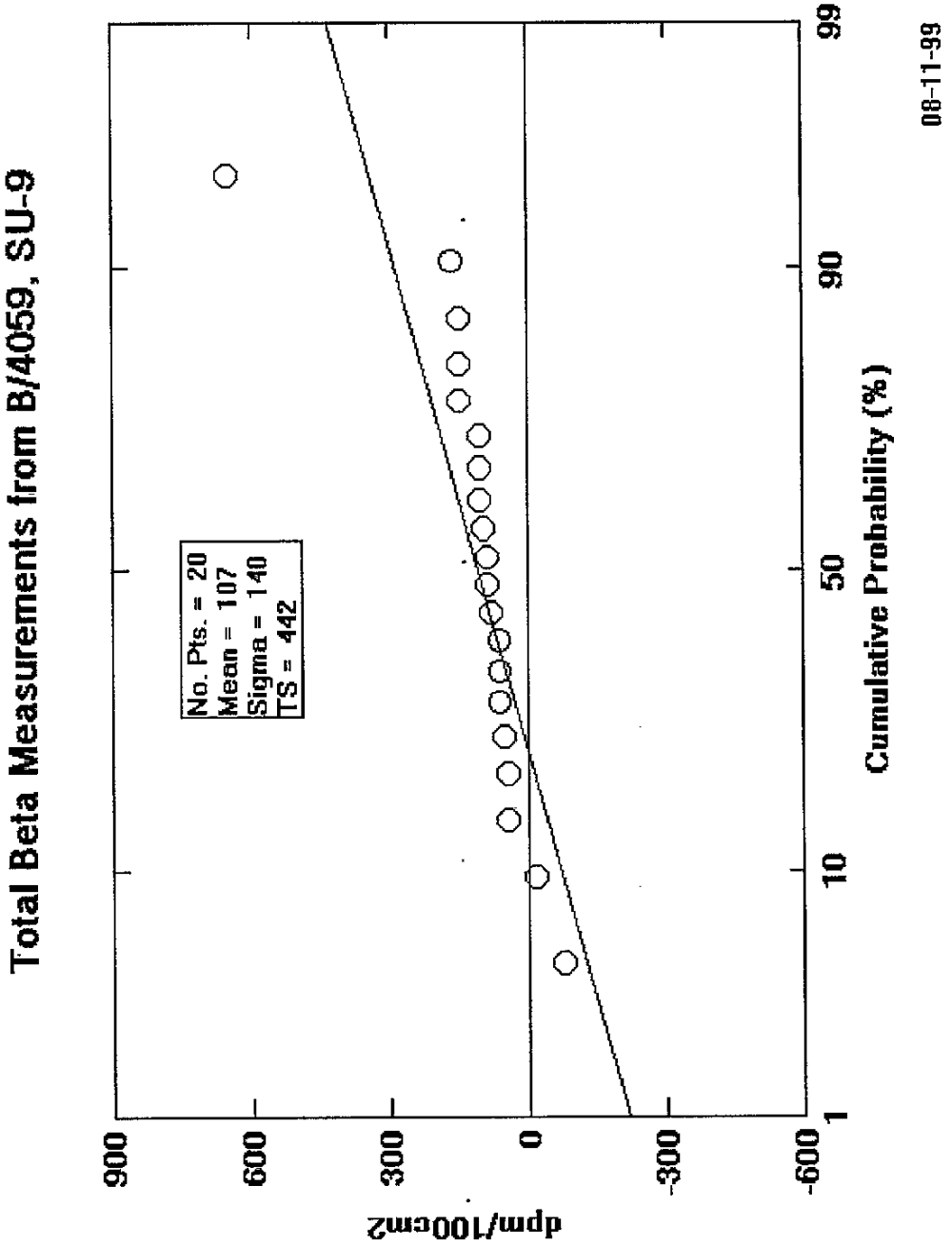
SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
VER CEILING/WWALL	1	55	3		51	8.7	5	0.28	2.89			1	174.0	447.86		7.86	5.23		
VER CEILING/WWALL	2	59	14		51	8.7	5	0.28	2.89			2	69.6	154.16		39.65	10.92		
VER CEILING/WWALL	3	72	1		51	8.7	5	0.28	2.89			3	182.7	157.32		2.08	3.27		
VER CEILING/WWALL	4	51	2		51	8.7	5	0.28	2.89			4	0.0	152.19		4.97	4.36		
VER CEILING/WWALL	5	69	18		51	8.7	5	0.28	2.89			5	156.6	156.60		51.21	12.36		
VER CEILING/WWALL	6	63	7		51	8.7	5	0.28	2.89			6	104.4	155.14		19.42	7.80		
VER CEILING/WWALL	7	58	5		51	8.7	5	0.28	2.89			7	60.9	153.92		13.64	6.64		
VER CEILING/WWALL	8	63	6		51	8.7	5	0.28	2.89			8	104.4	155.14		16.53	7.24		
VER CEILING/WWALL	9	72	4		51	8.7	5	0.28	2.89			9	182.7	157.32		10.75	5.98		
VER CEILING/WWALL	10	63	7		51	8.7	5	0.28	2.89			10	104.4	155.14		19.42	7.80		
VER CEILING/WWALL	11	89	9		51	8.7	5	0.28	2.89			11	330.6	161.36		25.20	8.80		
VER CEILING/WWALL	12	67	3		51	8.7	5	0.28	2.89			12	139.2	156.12		7.86	5.23		
VER CEILING/WWALL	13	78	15		51	8.7	5	0.28	2.89			13	234.9	158.76		42.54	11.30		
VER CEILING/WWALL	14	79	6		51	8.7	5	0.28	2.89			14	243.6	159.00		16.53	7.24		
VER CEILING/WWALL	15	63	8		51	8.7	5	0.28	2.89			15	104.4	155.14		22.31	8.32		
VER CEILING/WWALL	16	66	5		51	8.7	5	0.28	2.89			16	130.5	155.87		13.64	6.64		
VER CEILING/WWALL	17	88	3		51	8.7	5	0.28	2.89			17	321.9	161.13		7.86	5.23		
VER CEILING/WWALL	18	79	5		51	8.7	5	0.28	2.89			18	243.6	159.00		13.64	6.64		
VER CEILING/WWALL	19	71	1		51	8.7	5	0.28	2.89			19	174.0	157.08		2.08	3.27		
VER CEILING/WWALL	20	48	3		51	8.7	5	0.28	2.89			20	-26.1	151.44		7.86	5.23		
5/12-13 & 5/24																			

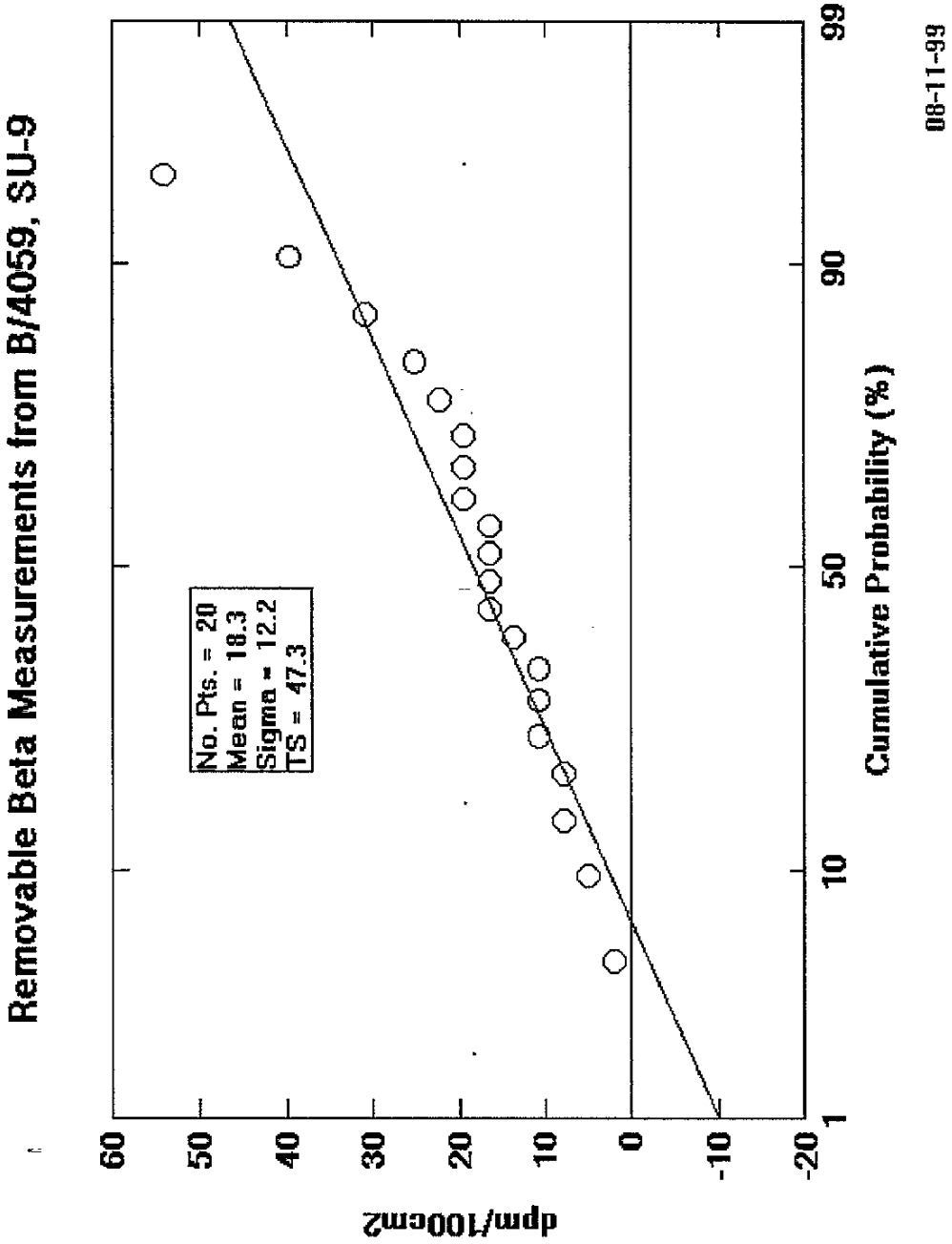
BUILDING 4059 CLASS I SURVEY UNIT 9 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER NORTH & SOUTH WALL	1	652	4347	1
VER NORTH & SOUTH WALL	2	52	4947	1
VER NORTH & SOUTH WALL	3	78	4921	1
VER NORTH & SOUTH WALL	4	147	4852	1
VER NORTH & SOUTH WALL	5	60	4939	1
VER NORTH & SOUTH WALL	6	165	4834	1
VER NORTH & SOUTH WALL	7	147	4852	1
VER NORTH & SOUTH WALL	8	147	4852	1
VER NORTH & SOUTH WALL	9	104	4895	1
VER NORTH & SOUTH WALL	10	95	4904	1
VER NORTH & SOUTH WALL	11	87	4913	1
VER NORTH & SOUTH WALL	12	-78	5078	1
VER NORTH & SOUTH WALL	13	60	4939	1
VER NORTH & SOUTH WALL	14	43	4956	1
VER NORTH & SOUTH WALL	15	87	4913	1
VER NORTH & SOUTH WALL	16	60	4939	1
VER NORTH & SOUTH WALL	17	-17	5017	1
VER NORTH & SOUTH WALL	18	43	4956	1
VER NORTH & SOUTH WALL	19	104	4895	1
VER NORTH & SOUTH WALL	20	104	4895	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS I SURVEY UNIT 9 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER NORTH & SOUTH WALL	1	13	986	1
VER NORTH & SOUTH WALL	2	19	980	1
VER NORTH & SOUTH WALL	3	19	980	1
VER NORTH & SOUTH WALL	4	10	989	1
VER NORTH & SOUTH WALL	5	7	992	1
VER NORTH & SOUTH WALL	6	4	995	1
VER NORTH & SOUTH WALL	7	54	945	1
VER NORTH & SOUTH WALL	8	16	983	1
VER NORTH & SOUTH WALL	9	10	989	1
VER NORTH & SOUTH WALL	10	7	992	1
VER NORTH & SOUTH WALL	11	10	989	1
VER NORTH & SOUTH WALL	12	22	977	1
VER NORTH & SOUTH WALL	13	16	983	1
VER NORTH & SOUTH WALL	14	25	974	1
VER NORTH & SOUTH WALL	15	2	997	1
VER NORTH & SOUTH WALL	16	19	980	1
VER NORTH & SOUTH WALL	17	16	983	1
VER NORTH & SOUTH WALL	18	30	969	1
VER NORTH & SOUTH WALL	19	16	983	1
VER NORTH & SOUTH WALL	20	39	960	1
			TOTAL POSITIVES	20


Total Beta Measurements from B/4059, SU-9
No. Pts. = 20
Mean = 107
Sigma = 140
TS = 442
dpm/100cm2
900
600
300
0
-300
-600
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-9
No. Pts. = 20
Mean = 18.3
Sigma = 12.2
TS = 47.3
dpm/100cm2
60
50
40
30
20
10
0
-10
-20
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 SU9
VER N S WALLS

SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
VER N&S WALLS	1	66	5		51	8.7	5	0.28	2.89			1	652.5	470.52		13.64	6.64		
VER N&S WALLS	2	57	7		51	8.7	5	0.28	2.89			2	52.2	153.67		19.42	7.80		
VER N&S WALLS	3	60	7		51	8.7	5	0.28	2.89			3	78.3	154.41		19.42	7.80		
VER N&S WALLS	4	68	4		51	8.7	5	0.28	2.89			4	147.9	156.36		10.75	5.98		
VER N&S WALLS	5	58	3		51	8.7	5	0.28	2.89			5	60.9	153.92		7.86	5.23		
VER N&S WALLS	6	70	2		51	8.7	5	0.28	2.89			6	165.3	156.84		4.97	4.36		
VER N&S WALLS	7	68	19		51	8.7	5	0.28	2.89			7	147.9	156.36		54.10	12.69		
VER N&S WALLS	8	68	6		51	8.7	5	0.28	2.89			8	147.9	156.36		16.53	7.24		
VER N&S WALLS	9	63	4		51	8.7	5	0.28	2.89			9	104.4	155.14		10.75	5.98		
VER N&S WALLS	10	62	3		51	8.7	5	0.28	2.89			10	95.7	154.90		7.86	5.23		
VER N&S WALLS	11	61	4		51	8.7	5	0.28	2.89			11	87.0	154.65		10.75	5.98		
VER N&S WALLS	12	42	8		51	8.7	5	0.28	2.89			12	-78.3	149.93		22.31	8.32		
VER N&S WALLS	13	58	6		51	8.7	5	0.28	2.89			13	60.9	153.92		16.53	7.24		
VER N&S WALLS	14	56	9		51	8.7	5	0.28	2.89			14	43.5	153.43		25.20	8.80		
VER N&S WALLS	15	61	1		51	8.7	5	0.28	2.89			15	87.0	154.65		2.08	3.27		
VER N&S WALLS	16	58	7		51	8.7	5	0.28	2.89			16	60.9	153.92		19.42	7.80		
VER N&S WALLS	17	49	6		51	8.7	5	0.28	2.89			17	-17.4	151.69		16.53	7.24		
VER N&S WALLS	18	56	11		51	8.7	5	0.28	2.89			18	43.5	153.43		30.98	9.71		
VER N&S WALLS	19	63	6		51	8.7	5	0.28	2.89			19	104.4	155.14		16.53	7.24		
VER N&S WALLS	20	63	14		51	8.7	5	0.28	2.89			20	104.4	155.14		39.65	10.92		
5/12-13 & 5/24																			

BUILDING 4059 CLASS I SURVEY UNIT 10 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

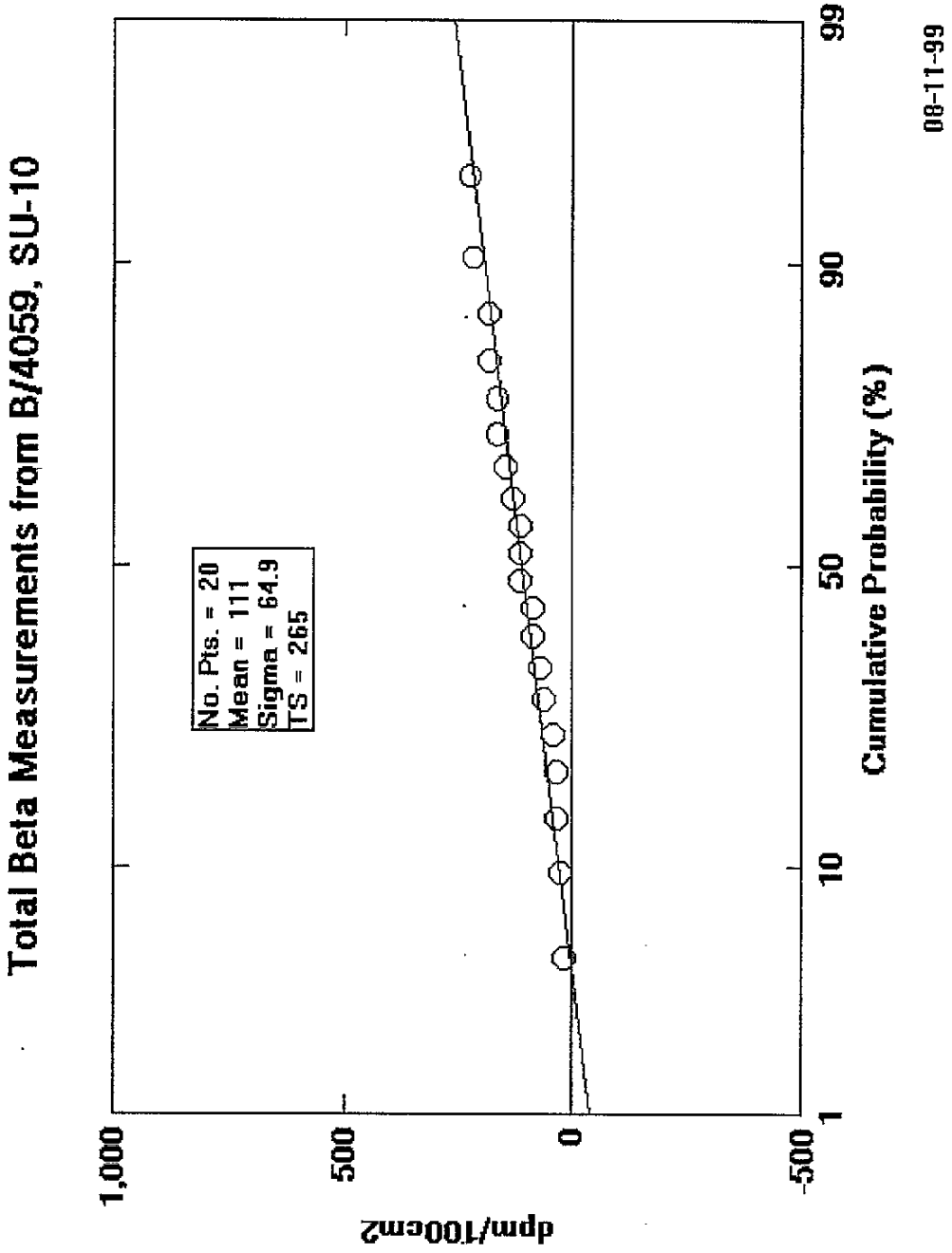
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER FLOOR & EAST WALL	1	217	4782	1
VER FLOOR & EAST WALL	2	17	4982	1
VER FLOOR & EAST WALL	3	226	4773	1
VER FLOOR & EAST WALL	4	34	4965	1
VER FLOOR & EAST WALL	5	113	4886	1
VER FLOOR & EAST WALL	6	165	4834	1
VER FLOOR & EAST WALL	7	130	4869	1
VER FLOOR & EAST WALL	8	26	4973	1
VER FLOOR & EAST WALL	9	147	4852	1
VER FLOOR & EAST WALL	10	165	4834	1
VER FLOOR & EAST WALL	11	182	4817	1
VER FLOOR & EAST WALL	12	34	4965	1
VER FLOOR & EAST WALL	13	60	4939	1
VER FLOOR & EAST WALL	14	182	4817	1
VER FLOOR & EAST WALL	15	87	4913	1
VER FLOOR & EAST WALL	16	69	4930	1
VER FLOOR & EAST WALL	17	43	4956	1
VER FLOOR & EAST WALL	18	113	4886	1
VER FLOOR & EAST WALL	19	113	4886	1
VER FLOOR & EAST WALL	20	87	4913	1
			TOTAL POSITIVES	20

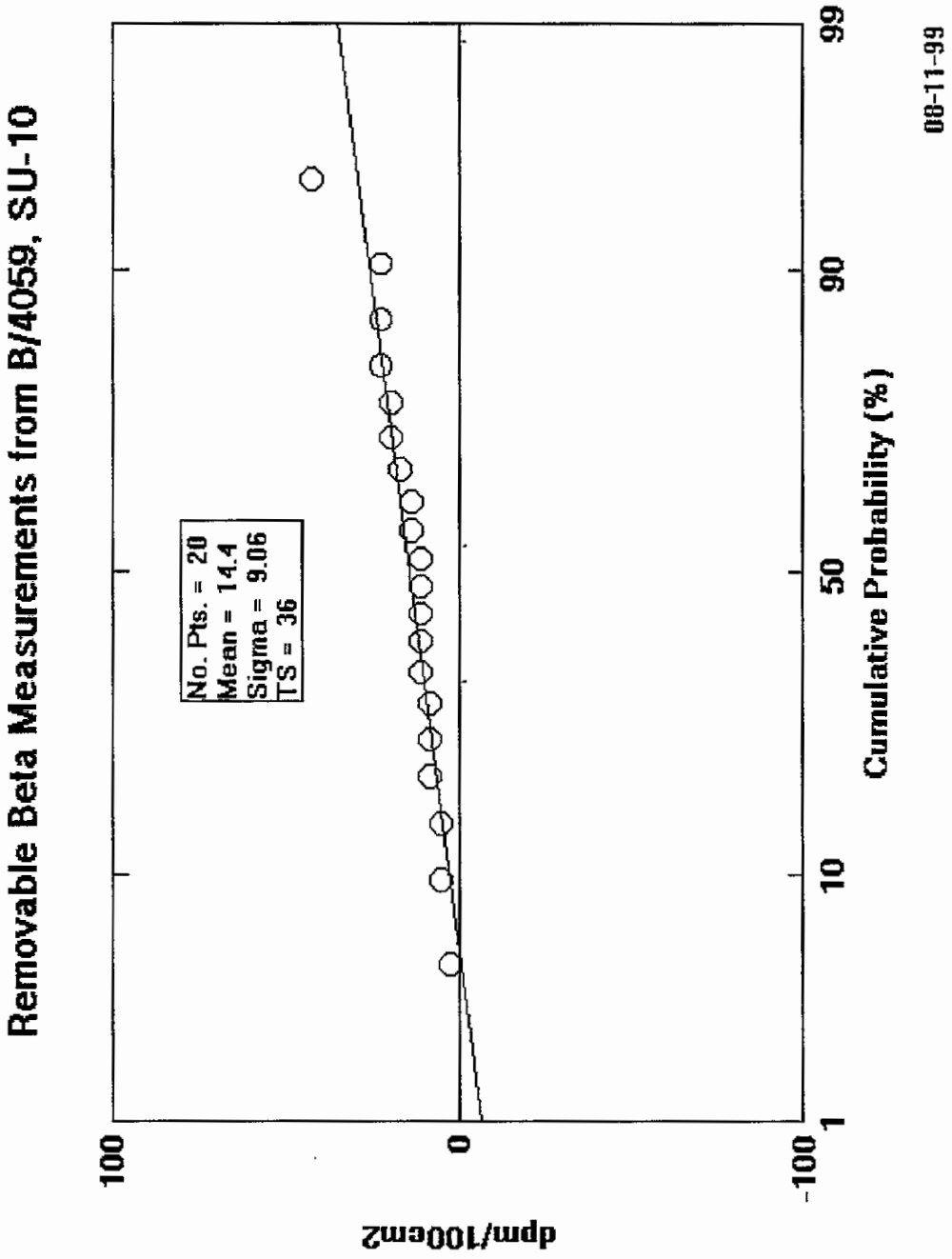
BUILDING 4059 CLASS I SURVEY UNIT 10 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER FLOOR & EAST WALL	1	5	994	1
VER FLOOR & EAST WALL	2	11	988	1
VER FLOOR & EAST WALL	3	22	977	1
VER FLOOR & EAST WALL	4	11	988	1
VER FLOOR & EAST WALL	5	11	988	1
VER FLOOR & EAST WALL	6	19	980	1
VER FLOOR & EAST WALL	7	8	991	1
VER FLOOR & EAST WALL	8	13	986	1
VER FLOOR & EAST WALL	9	5	994	1
VER FLOOR & EAST WALL	10	2	997	1
VER FLOOR & EAST WALL	11	16	983	1
VER FLOOR & EAST WALL	12	22	977	1
VER FLOOR & EAST WALL	13	11	988	1
VER FLOOR & EAST WALL	14	8	991	1
VER FLOOR & EAST WALL	15	42	957	1
VER FLOOR & EAST WALL	16	13	986	1
VER FLOOR & EAST WALL	17	8	991	1
VER FLOOR & EAST WALL	18	22	977	1
VER FLOOR & EAST WALL	19	19	980	1
VER FLOOR & EAST WALL	20	11	988	1
			TOTAL POSITIVES	20

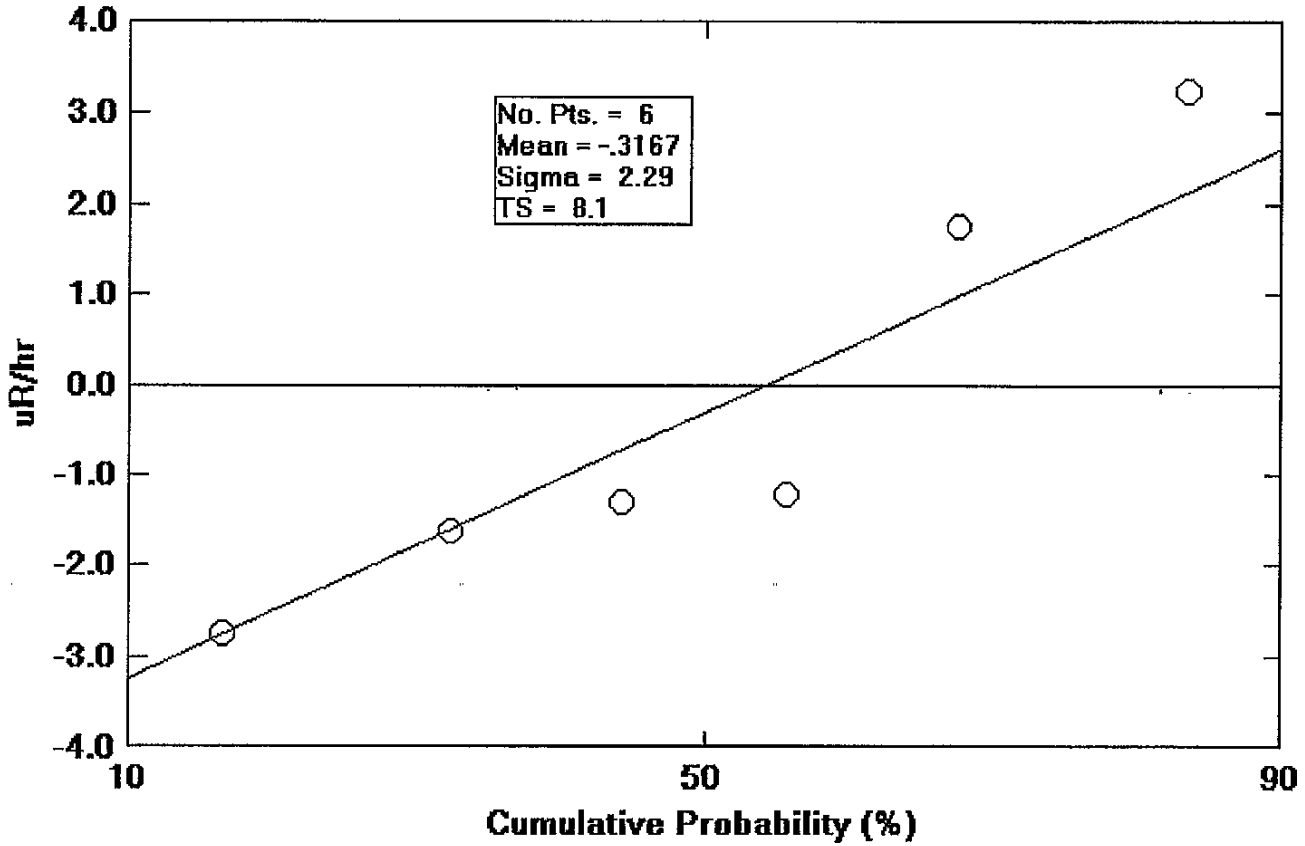
BUILDING 4059 CLASS I SURVEY UNIT 10 SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
VER FLOOR & EAST WALL	1	1.7	3.2	1
VER FLOOR & EAST WALL	2	-1.2	6.2	1
VER FLOOR & EAST WALL	3	-2.7	7.7	1
VER FLOOR & EAST WALL	4	-1.6	6.6	1
VER FLOOR & EAST WALL	5	3.2	1.7	1
VER FLOOR & EAST WALL	6	-1.2	6.2	1
			TOTAL POSITIVES	6


Total Beta Measurements from B/4059, SU-10
No. Pts. = 20
Mean = 111
Sigma = 64.9
TS = 265
dpm/100cm2
1,000
500
0
-500
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-10
No. Pts. = 20
Mean = 14.4
Sigma = 9.06
TS = 36
dpm/100cm2
100
0
-100
1
10
50
90
99
Cumulative Probability (%)
08-11-99

Net Ambient Gamma Measurements from B/4059, SU-10



08-11-99

B/4059 SU10
VER E. WALL FLOOR

SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
VER E. WALL/FLR	1	56	2	4108	51	8.7	5	0.16	2.89	3732	0.005	1	217.5	449.97		5.32	4.25	1.75	0.41
VER E. WALL/FLR	2	53	4	3470	51	8.7	5	0.16	2.89	3732	0.005	2	17.4	152.68		11.10	5.89	-1.22	0.39
VER E. WALL/FLR	3	77	8	3141	51	8.7	5	0.16	2.89	3732	0.005	3	226.2	158.52		22.66	8.26	-2.75	0.39
VER E. WALL/FLR	4	55	4	3383	51	8.7	5	0.16	2.89	3732	0.005	4	34.8	153.18		11.10	5.89	-1.62	0.39
VER E. WALL/FLR	5	64	4	4428	51	8.7	5	0.16	2.89	3732	0.005	5	113.1	155.39		11.10	5.89	3.24	0.42
VER E. WALL/FLR	6	70	7	3453	51	8.7	5	0.16	2.89	3732	0.005	6	165.3	156.84		19.77	7.73	-1.30	0.39
VER E. WALL/FLR	7	66	3		51	8.7	5	0.16	2.89			7	130.5	155.87		8.21	5.14		
VER E. WALL/FLR	8	54	5		51	8.7	5	0.16	2.89			8	26.1	152.93		13.99	6.56		
VER E. WALL/FLR	9	68	2		51	8.7	5	0.16	2.89			9	147.9	156.36		5.32	4.25		
VER E. WALL/FLR	10	70	1		51	8.7	5	0.16	2.89			10	165.3	156.84		2.43	3.11		
VER E. WALL/FLR	11	72	6		51	8.7	5	0.16	2.89			11	182.7	157.32		16.88	7.17		
VER E. WALL/FLR	12	55	8		51	8.7	5	0.16	2.89			12	34.8	153.18		22.66	8.26		
VER E. WALL/FLR	13	58	4		51	8.7	5	0.16	2.89			13	60.9	153.92		11.10	5.89		
VER E. WALL/FLR	14	72	3		51	8.7	5	0.16	2.89			14	182.7	157.32		8.21	5.14		
VER E. WALL/FLR	15	61	15		51	8.7	5	0.16	2.89			15	87.0	154.65		42.89	11.25		
VER E. WALL/FLR	16	59	5		51	8.7	5	0.16	2.89			16	69.6	154.16		13.99	6.56		
VER E. WALL/FLR	17	56	3		51	8.7	5	0.16	2.89			17	43.5	153.43		8.21	5.14		
VER E. WALL/FLR	18	64	8		51	8.7	5	0.16	2.89			18	113.1	155.39		22.66	8.26		
VER E. WALL/FLR	19	64	7		51	8.7	5	0.16	2.89			19	113.1	155.39		19.77	7.73		
VER E. WALL/FLR	20	61	4		51	8.7	5	0.16	2.89			20	87.0	154.65		11.10	5.89		
5/12-13 & 5/20, 28																			

APPENDIX C

CLASS II SURVEY RESULTS

BUILDING 4059 CLASS II SURVEY UNIT 11 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

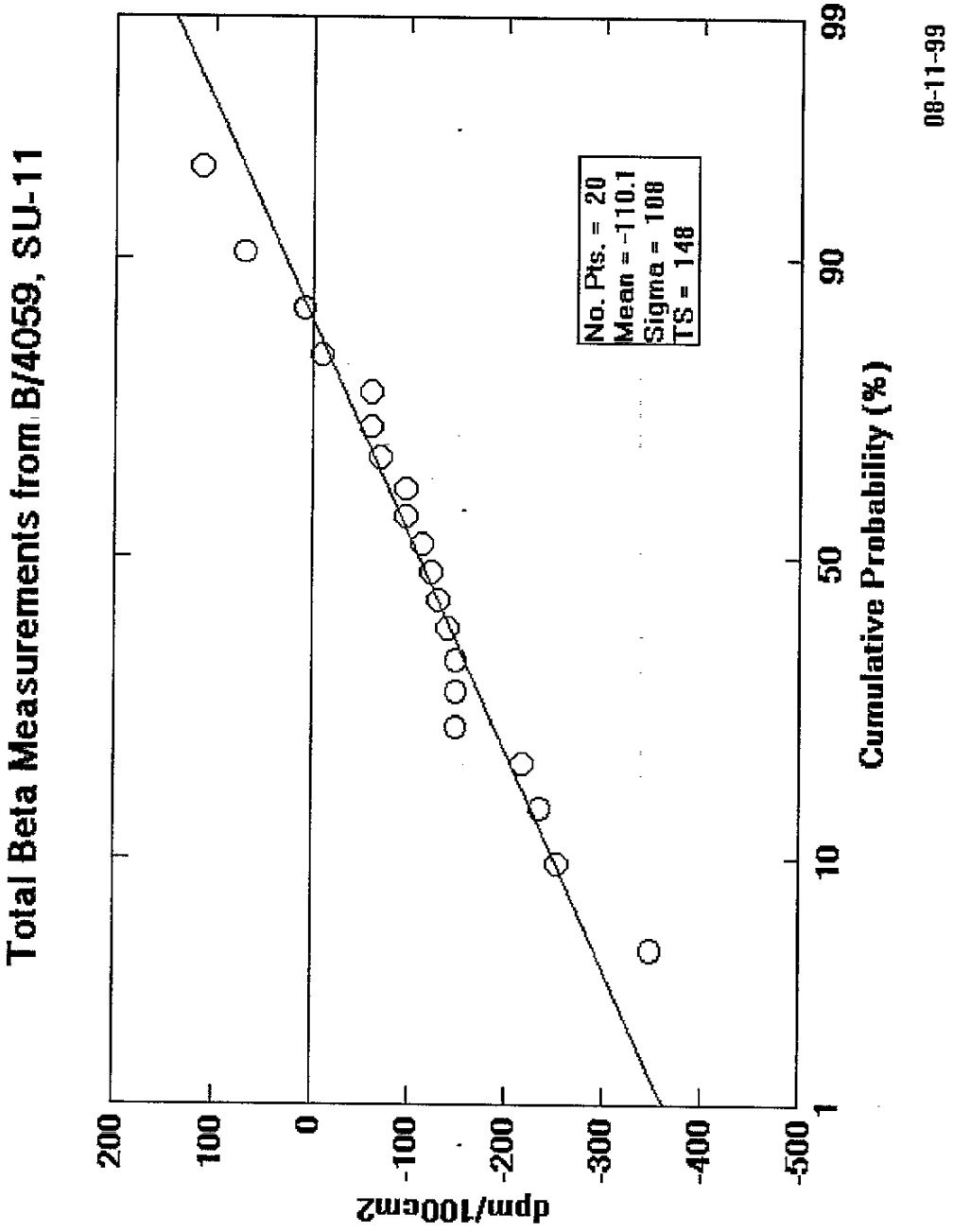
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
HIGH BAY	1	-348	5348	1
HIGH BAY	2	8	4991	1
HIGH BAY	3	69	4930	1
HIGH BAY	4	-121	5121	1
HIGH BAY	5	-8	5008	1
HIGH BAY	6	-95	5095	1
HIGH BAY	7	-69	5069	1
HIGH BAY	8	-139	5139	1
HIGH BAY	9	-147	5147	1
HIGH BAY	10	-113	5113	1
HIGH BAY	11	-252	5252	1
HIGH BAY	12	-234	5234	1
HIGH BAY	13	-130	5130	1
HIGH BAY	14	-147	5147	1
HIGH BAY	15	-95	5095	1
HIGH BAY	16	-217	5217	1
HIGH BAY	17	-147	5147	1
HIGH BAY	18	-60	5060	1
HIGH BAY	19	113	4886	1
HIGH BAY	20	-60	5060	1
			TOTAL POSITIVES	20

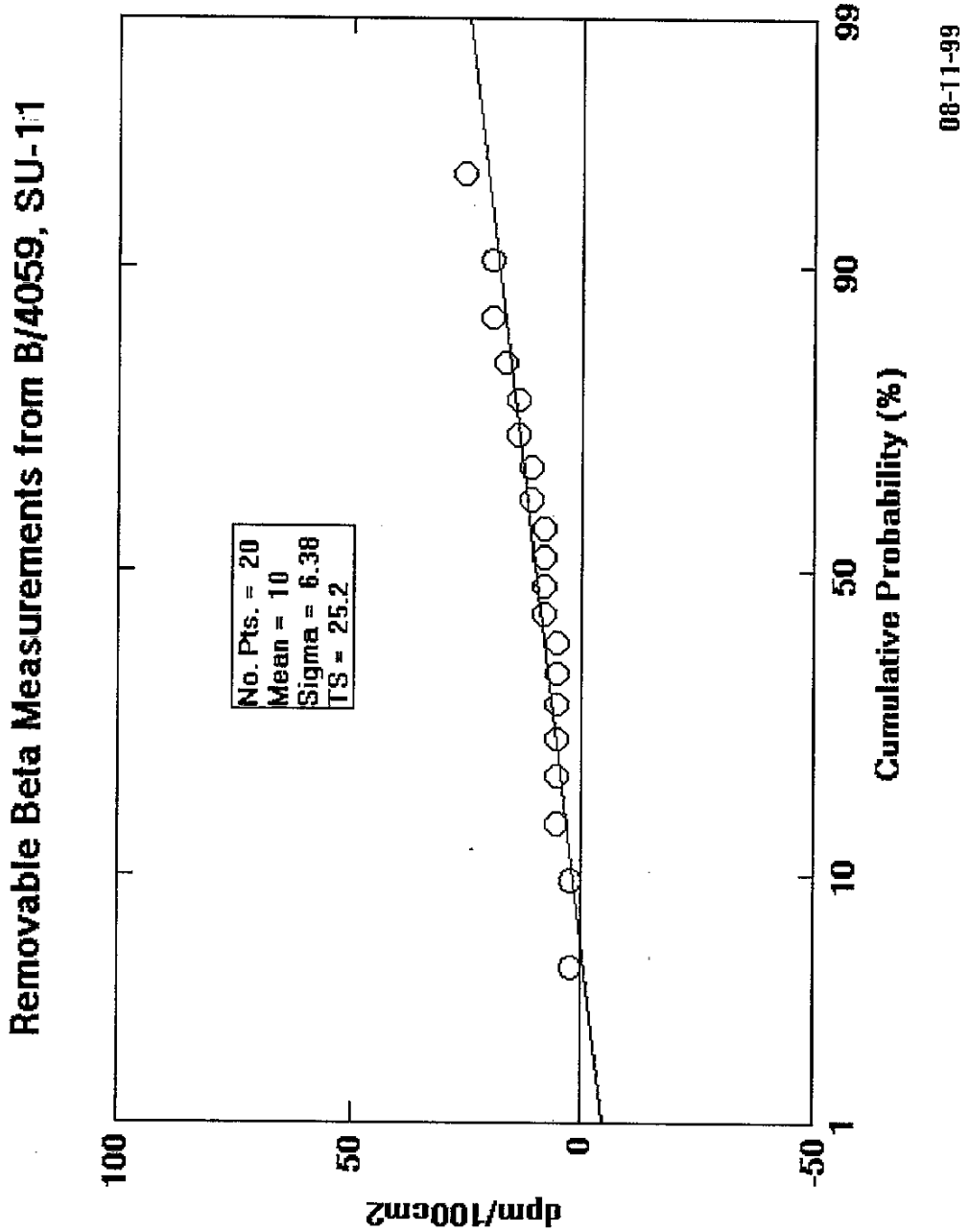
BUILDING 4059 CLASS II SURVEY UNIT 11 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

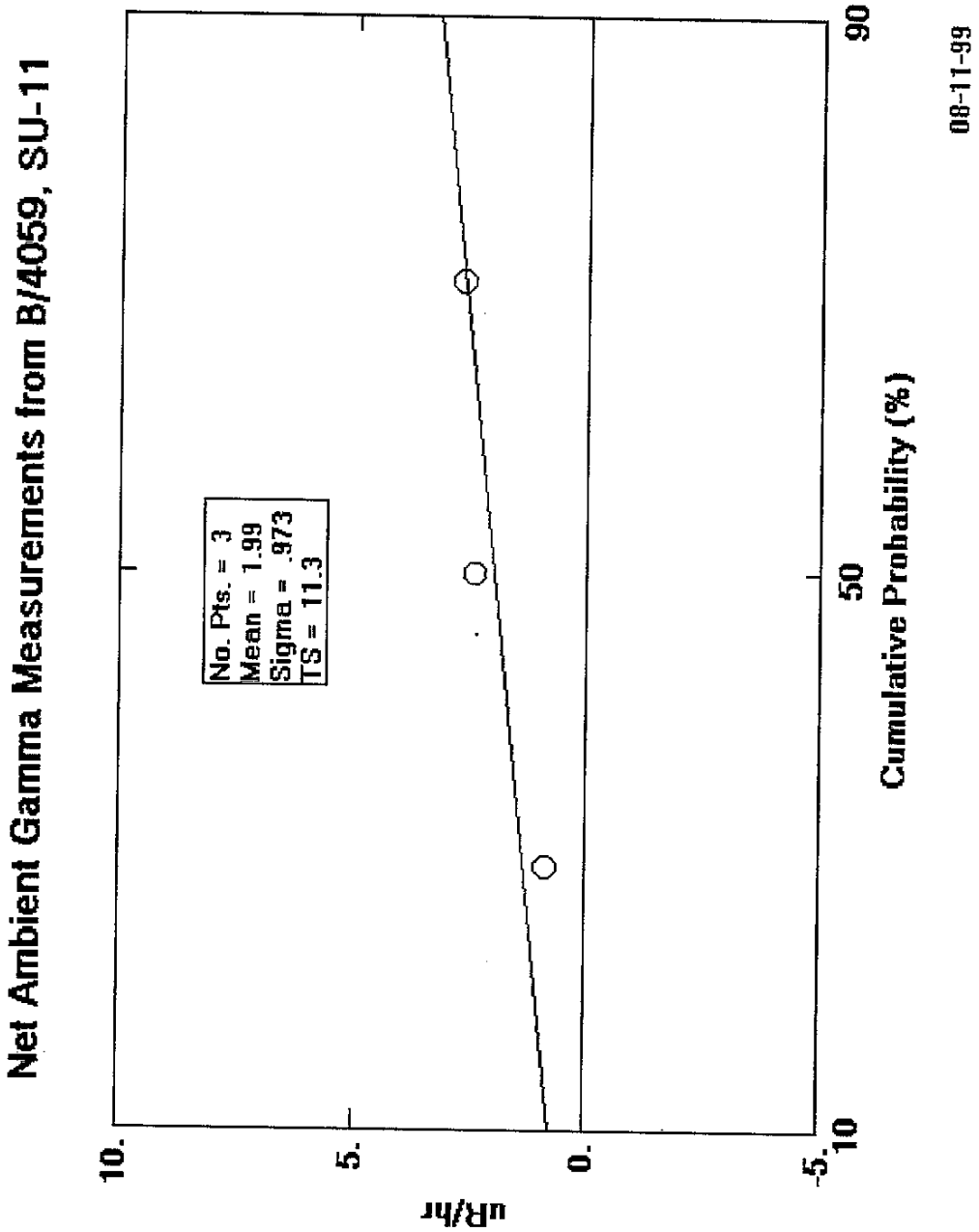
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
HIGH BAY	1	5	994	1
HIGH BAY	2	5	994	1
HIGH BAY	3	2	997	1
HIGH BAY	4	8	991	1
HIGH BAY	5	5	994	1
HIGH BAY	6	8	991	1
HIGH BAY	7	8	991	1
HIGH BAY	8	19	980	1
HIGH BAY	9	11	988	1
HIGH BAY	10	2	997	1
HIGH BAY	11	25	974	1
HIGH BAY	12	8	991	1
HIGH BAY	13	5	994	1
HIGH BAY	14	19	980	1
HIGH BAY	15	16	983	1
HIGH BAY	16	11	988	1
HIGH BAY	17	13	986	1
HIGH BAY	18	5	994	1
HIGH BAY	19	13	986	1
HIGH BAY	20	5	994	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS II SURVEY UNIT 11 SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
HIGH BAY	1	0.8	4.1	1
HIGH BAY	2	2.6	2.3	1
HIGH BAY	3	2.4	2.5	1
			TOTAL POSITIVES	3


Total Beta Measurements from B/4059, SU-11
dpm/100cm2
200
100
0
-100
-200
-300
-400
-500
1
10
50
90
99
Cumulative Probability (%)
No. Pts. = 20
Mean = -110.1
Sigma = 108
TS = 148
08-11-99


Removable Beta Measurements from B/4059, SU-11
No. Pts. = 20
Mean = 10
Sigma = 6.38
TS = 25.2
dpm/100cm2
100
50
0
-50
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Net Ambient Gamma Measurements from B/4059, SU-11
No. Pts. = 3
Mean = 1.99
Sigma = .973
TS = 11.3
uR/hr
10.
5.
0.
-5.
10
50
90
Cumulative Probability (%)
08-11-99

B/4059 SU11
CLASS II
HIGH BAY

SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT
HIGHBAY 5/7, 11	1	47	2	1972	55	8.7	5	0.18	2.89	1784	0.005
HIGHBAY	2	56	2	2359	55	8.7	5	0.18	2.89	1784	0.005
HIGHBAY	3	63	1	2304	55	8.7	5	0.18	2.89	1784	0.005
HIGHBAY	4	41	3		55	8.7	5	0.18	2.89		
HIGHBAY	5	54	2		55	8.7	5	0.18	2.89		
HIGHBAY	6	44	3		55	8.7	5	0.18	2.89		
HIGHBAY	7	47	3		55	8.7	5	0.18	2.89		
HIGHBAY	8	39	7		55	8.7	5	0.18	2.89		
HIGHBAY	9	38	4		55	8.7	5	0.18	2.89		
HIGHBAY	10	42	1		55	8.7	5	0.18	2.89		
HIGHBAY	11	26	9		55	8.7	5	0.18	2.89		
HIGHBAY	12	28	3		55	8.7	5	0.18	2.89		
HIGHBAY	13	40	2		55	8.7	5	0.18	2.89		
HIGHBAY	14	38	7		55	8.7	5	0.18	2.89		
HIGHBAY	15	44	6		55	8.7	5	0.18	2.89		
HIGHBAY	16	30	4		55	8.7	5	0.18	2.89		
HIGHBAY	17	38	5		55	8.7	5	0.18	2.89		
HIGHBAY	18	48	2		55	8.7	5	0.18	2.89		
HIGHBAY	19	68	5		55	8.7	5	0.18	2.89		
HIGHBAY	20	48	2		55	8.7	5	0.18	2.89		

GRID NO.	BETA (DPM/100CM2) TOTAL	STD DEV	STD DE	REM	STD DEV	GAMMA (uR/hr) TOTAL	STD DEV
1	-348.0	439.33		5.26	4.27	0.88	0.28
2	8.7	158.28		5.26	4.27	2.68	0.30
3	69.6	159.95		2.37	3.14	2.42	0.30
4	-121.8	154.65		8.15	5.15		
5	-8.7	157.80		5.26	4.27		
6	-95.7	155.39		8.15	5.15		
7	-69.6	156.12		8.15	5.15		
8	-139.2	154.16		19.71	7.74		
9	-147.9	153.92		11.04	5.91		
10	-113.1	154.90		2.37	3.14		
11	-252.3	150.94		25.49	8.76		
12	-234.9	151.44		8.15	5.15		
13	-130.5	154.41		5.26	4.27		
14	-147.9	153.92		19.71	7.74		
15	-95.7	155.39		16.82	7.18		
16	-217.5	151.94		11.04	5.91		
17	-147.9	153.92		13.93	6.58		
18	-60.9	156.36		5.26	4.27		
19	113.1	161.13		13.93	6.58		
20	-60.9	156.36		5.26	4.27		

BUILDING 4059 CLASS II
SURVEY UNIT 12A SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
EAST STAIRWELL	1	348	4652	1
EAST STAIRWELL	2	60	4939	1
EAST STAIRWELL	3	8	4991	1
EAST STAIRWELL	4	78	4921	1
EAST STAIRWELL	5	8	4991	1
EAST STAIRWELL	6	139	4860	1
EAST STAIRWELL	7	147	4852	1
EAST STAIRWELL	8	34	4965	1
EAST STAIRWELL	9	0	5000	1
EAST STAIRWELL	10	130	4869	1
EAST STAIRWELL	11	60	4939	1
EAST STAIRWELL	12	52	4947	1
EAST STAIRWELL	13	165	4834	1
EAST STAIRWELL	14	60	4939	1
EAST STAIRWELL	15	52	4947	1
EAST STAIRWELL	16	-104	5104	1
EAST STAIRWELL	17	269	4730	1
			TOTAL POSITIVES	17

BUILDING 4059 CLASS II
SURVEY UNIT 12A SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
EAST STAIRWELL	1	5	994	1
EAST STAIRWELL	2	2	997	1
EAST STAIRWELL	3	-0.3	1000	1
EAST STAIRWELL	4	16	983	1
EAST STAIRWELL	5	2	997	1
EAST STAIRWELL	6	11	988	1
EAST STAIRWELL	7	2	997	1
EAST STAIRWELL	8	14	985	1
EAST STAIRWELL	9	8	991	1
EAST STAIRWELL	10	8	991	1
EAST STAIRWELL	11	2	997	1
EAST STAIRWELL	12	22	977	1
EAST STAIRWELL	13	5	994	1
EAST STAIRWELL	14	11	988	1
EAST STAIRWELL	15	11	988	1
EAST STAIRWELL	16	5	994	1
EAST STAIRWELL	17	5	994	1
			TOTAL POSITIVES	17

BUILDING 4059 CLASS II
SURVEY UNIT 12A SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
EAST STAIRWELL	1	-0.3	5.3	1
EAST STAIRWELL	2	3.2	1.7	1
EAST STAIRWELL	3	0.9	4.0	1
EAST STAIRWELL	4	4.0	0.9	1
EAST STAIRWELL	5	3.3	1.6	1
EAST STAIRWELL	6	3.2	1.7	1
			TOTAL POSITIVES	6

BUILDING 4059 CLASS II
SURVEY UNIT 12B SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
WEST STAIRWELL	1	1.2	3.7	1
WEST STAIRWELL	2	1.2	3.7	1
WEST STAIRWELL	3	0.5	4.4	1
WEST STAIRWELL	4	0.4	4.5	1
WEST STAIRWELL	5	1.7	3.2	1
WEST STAIRWELL	6	2.7	2.2	1
WEST STAIRWELL	7	-4.4	9.4	1
			TOTAL POSITIVES	7

BUILDING 4059 CLASS II SURVEY UNIT 12B SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

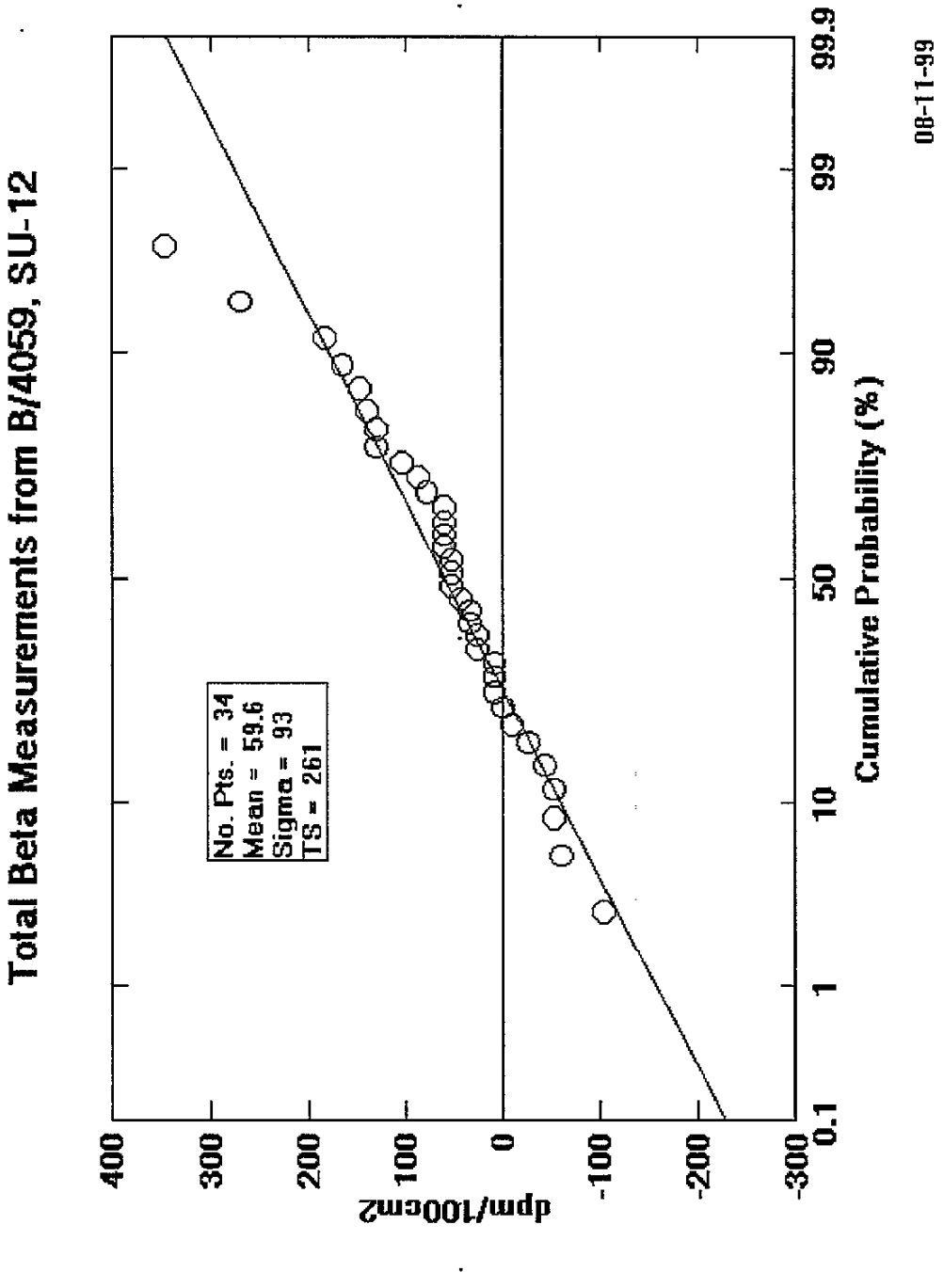
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
WEST STAIRWELL	1	-52	5052	1
WEST STAIRWELL	2	182	4817	1
WEST STAIRWELL	3	-43	5043	1
WEST STAIRWELL	4	26	4973	1
WEST STAIRWELL	5	-8	5008	1
WEST STAIRWELL	6	130	4869	1
WEST STAIRWELL	7	-60	5060	1
WEST STAIRWELL	8	34	4965	1
WEST STAIRWELL	9	-26	5026	1
WEST STAIRWELL	10	87	4913	1
WEST STAIRWELL	11	52	4947	1
WEST STAIRWELL	12	43	4956	1
WEST STAIRWELL	13	-52	5052	1
WEST STAIRWELL	14	60	4939	1
WEST STAIRWELL	15	26	4973	1
WEST STAIRWELL	16	8	4991	1
WEST STAIRWELL	17	104	4895	1
			TOTAL POSITIVES	17

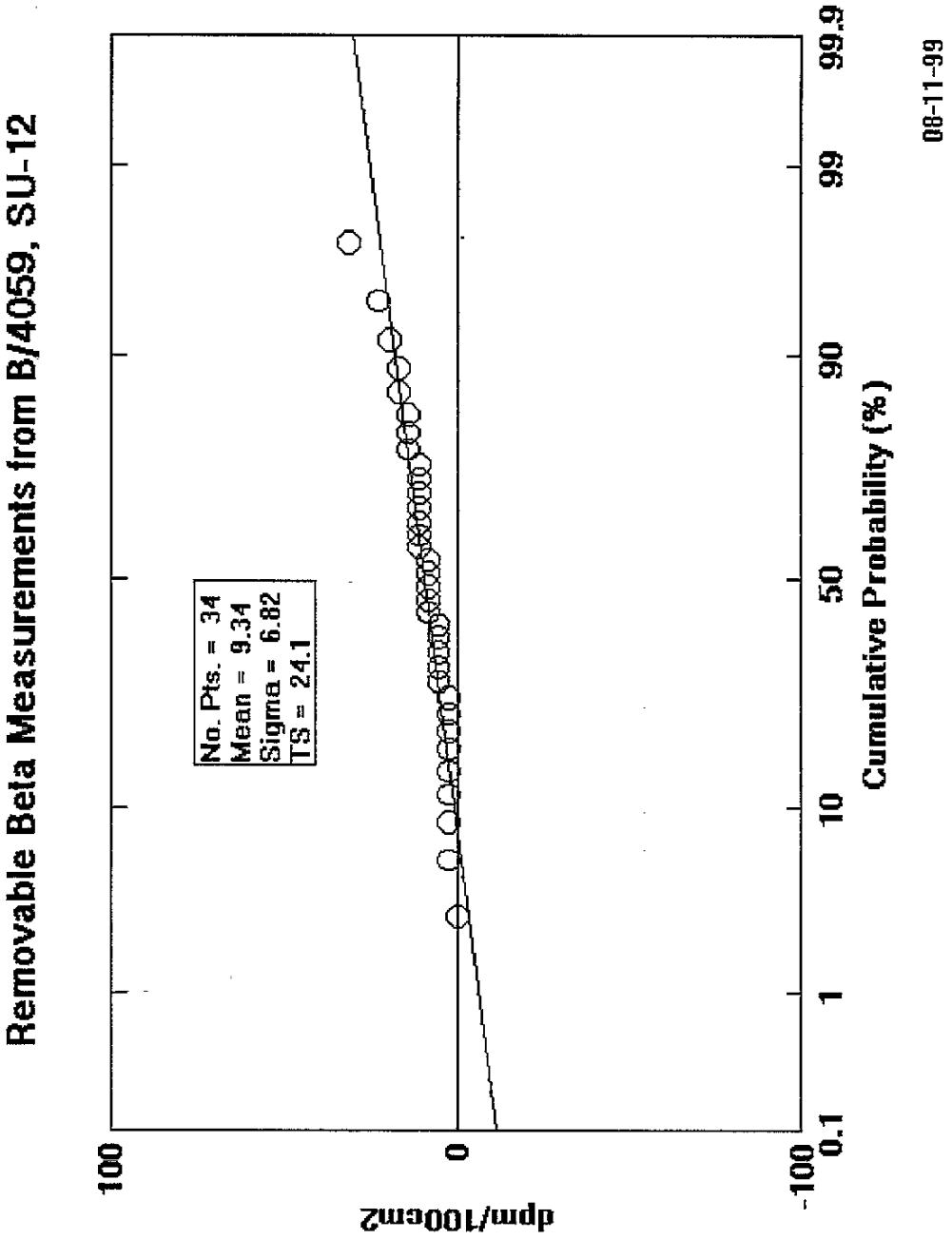
BUILDING 4059 CLASS II
SURVEY UNIT 12B SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

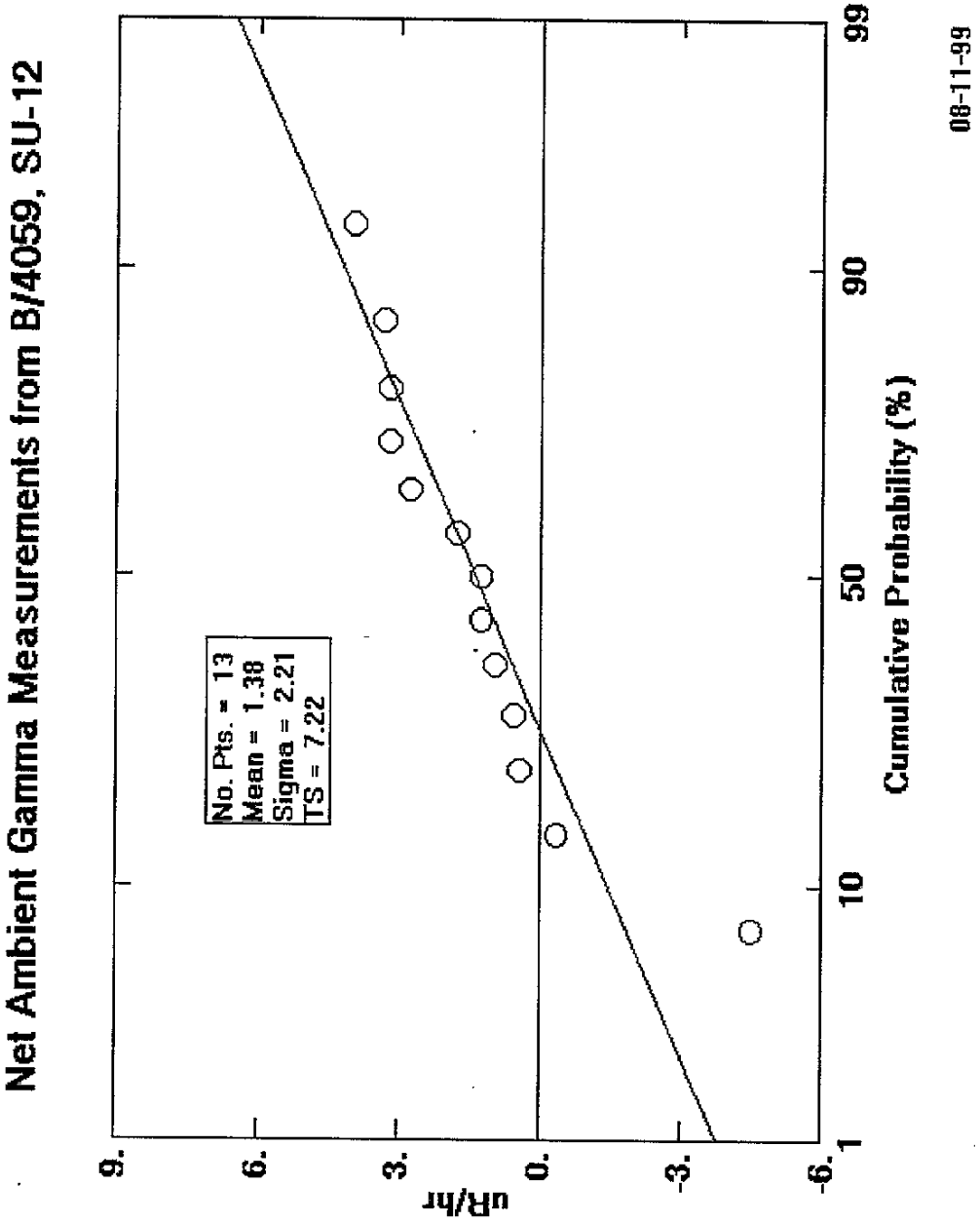
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
EAST STAIRWELL	1	11	988	1
EAST STAIRWELL	2	2	997	1
EAST STAIRWELL	3	16	983	1
EAST STAIRWELL	4	11	988	1
EAST STAIRWELL	5	5	994	1
EAST STAIRWELL	6	14	985	1
EAST STAIRWELL	7	14	985	1
EAST STAIRWELL	8	31	968	1
EAST STAIRWELL	9	11	988	1
EAST STAIRWELL	10	8	991	1
EAST STAIRWELL	11	2	997	1
EAST STAIRWELL	12	11	988	1
EAST STAIRWELL	13	19	980	1
EAST STAIRWELL	14	8	991	1
EAST STAIRWELL	15	8	991	1
EAST STAIRWELL	16	2	997	1
EAST STAIRWELL	17	2	997	1
			TOTAL POSITIVES	17

B/4059 SU13
CLASS II
BLDG 4459

SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
B/4459 4/22	1	75	4	2681	58	8.7	5	0.13	2.89	1798	0.005	1	739.5	501.67		11.18	5.87	4.11	0.31
B/4459	2	61	6	2186	58	8.7	5	0.13	2.89	1798	0.005	2	26.1	162.99		16.96	7.16	1.80	0.29
B/4459	3	67	5	2158	58	8.7	5	0.13	2.89	1798	0.005	3	78.3	164.38		14.07	6.55	1.67	0.29
B/4459	4	46	2	2464	58	8.7	5	0.13	2.89	1798	0.005	4	-104.4	159.47		5.40	4.22	3.10	0.30
B/4459	5	41	5		58	8.7	5	0.13	2.89			5	-147.9	158.28		14.07	6.55		
B/4459	6	51	5		58	8.7	5	0.13	2.89			6	-60.9	160.66		14.07	6.55		
B/4459	7	58	5		58	8.7	5	0.13	2.89			7	0.0	162.30		14.07	6.55		
B/4459	8	92	3		58	8.7	5	0.13	2.89			8	295.8	170.04		8.29	5.11		
B/4459	9	56	3		58	8.7	5	0.13	2.89			9	-17.4	161.83		8.29	5.11		
B/4459	10	78	5		58	8.7	5	0.13	2.89			10	174.0	166.89		14.07	6.55		
B/4459	11	51	1		58	8.7	5	0.13	2.89			11	-60.9	160.66		2.51	3.07		
B/4459	12	51	9		58	8.7	5	0.13	2.89			12	-60.9	160.66		25.63	8.73		
B/4459	13	56	3		58	8.7	5	0.13	2.89			13	-17.4	161.83		8.29	5.11		
B/4459	14	49	3		58	8.7	5	0.13	2.89			14	-78.3	160.18		8.29	5.11		
B/4459	15	49	3		58	8.7	5	0.13	2.89			15	-78.3	160.18		8.29	5.11		
B/4459	16	56	2		58	8.7	5	0.13	2.89			16	-17.4	161.83		5.40	4.22		
B/4459	17	49	3		58	8.7	5	0.13	2.89			17	-78.3	160.18		8.29	5.11		
B/4459	18	53	0		58	8.7	5	0.13	2.89			18	-43.5	161.13		-0.38	1.04		
B/4459	19	72	3		58	8.7	5	0.13	2.89			19	121.8	165.53		8.29	5.11		
B/4459	20	56	4		58	8.7	5	0.13	2.89			20	-17.4	161.83		11.18	5.87		


Total Beta Measurements from B/4059, SU-12
No. Pts. = 34
Mean = 59.6
Sigma = 93
TS = 261
dpm/100cm2
400
300
200
100
0
-100
-200
-300
0.1
1
10
50
90
99
99.9
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-12
No. Pts. = 34
Mean = 9.34
Sigma = 6.82
TS = 24.1
dpm/100cm2
100
0
-100
0.1
1
10
50
90
99
99.9
Cumulative Probability (%)
08-11-99


Net Ambient Gamma Measurements from B/4059, SU-12
No. Pts. = 13
Mean = 1.38
Sigma = 2.21
TS = 7.22
uR/hr
9.
6.
3.
0.
-3.
-6.
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 SU12
CLASS II
E W STAIRWELLS

SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
E STAIRWELL 4/23	1	63	2	2421	55	8.7	5	0.12	2.89	2500	0.0047	1	348.0	472.53		5.43	4.21	-0.37	0.33
E STAIRWELL 4/23	2	62	1	3190	55	8.7	5	0.12	2.89	2500	0.0047	2	60.9	159.71		2.54	3.06	3.21	0.35
E STAIRWELL 4/23	3	56	0	2707	55	8.7	5	0.12	2.89	2500	0.0047	3	8.7	158.28		-0.35	1.00	0.96	0.34
E STAIRWELL 4/23	4	64	6	3361	55	8.7	5	0.12	2.89	2500	0.0047	4	78.3	160.18		16.99	7.15	4.00	0.36
E STAIRWELL 4/23	5	56	1	3218	55	8.7	5	0.12	2.89	2500	0.0047	5	8.7	158.28		2.54	3.06	3.34	0.35
E STAIRWELL 4/23	6	71	4	3190	55	8.7	5	0.12	2.89	2500	0.0047	6	139.2	161.83		11.21	5.87	3.21	0.35
E STAIRWELL 4/23	7	72	1		55	8.7	5	0.12	2.89			7	147.9	162.06		2.54	3.06		
E STAIRWELL 4/23	8	59	5		55	8.7	5	0.12	2.89			8	34.8	159.00		14.10	6.54		
E STAIRWELL 4/23	9	55	3		55	8.7	5	0.12	2.89			9	0.0	158.04		8.32	5.10		
E STAIRWELL 4/23	10	70	3		55	8.7	5	0.12	2.89			10	130.5	161.60		8.32	5.10		
E STAIRWELL 4/23	11	62	1		55	8.7	5	0.12	2.89			11	60.9	159.71		2.54	3.06		
E STAIRWELL 4/23	12	61	8		55	8.7	5	0.12	2.89			12	52.2	159.47		22.77	8.24		
E STAIRWELL 4/23	13	74	2		55	8.7	5	0.12	2.89			13	165.3	162.53		5.43	4.21		
E STAIRWELL 4/23	14	62	4		55	8.7	5	0.12	2.89			14	60.9	159.71		11.21	5.87		
E STAIRWELL 4/23	15	61	4		55	8.7	5	0.12	2.89			15	52.2	159.47		11.21	5.87		
E STAIRWELL 4/23	16	43	2		55	8.7	5	0.12	2.89			16	-104.4	155.14		5.43	4.21		
E STAIRWELL 4/23	17	86	2		55	8.7	5	0.12	2.89			17	269.7	165.30		5.43	4.21		
W STAIRWELL 4/23	1	49	4	2524	55	8.7	5	0.12	2.89	2500	0.0047	1	-52.2	156.60		11.21	5.87	0.00	0.00
W STAIRWELL 4/23	2	76	1	2770	55	8.7	5	0.12	2.89	2500	0.0047	2	182.7	162.99		2.54	3.06	0.00	0.00
W STAIRWELL 4/23	3	50	6	2617	55	8.7	5	0.12	2.89	2500	0.0047	3	-43.5	156.84		16.99	7.15	0.00	0.00
W STAIRWELL 4/23	4	58	4	2593	55	8.7	5	0.12	2.89	2500	0.0047	4	26.1	158.76		11.21	5.87	0.00	0.00
W STAIRWELL 4/23	5	54	2	2880	55	8.7	5	0.12	2.89	2500	0.0047	5	-8.7	157.80		5.43	4.21	0.00	0.00
W STAIRWELL 4/23	6	70	5	3100	55	8.7	5	0.12	2.89	2500	0.0047	6	130.5	161.60		14.10	6.54	0.00	0.00
W STAIRWELL 4/23	7	48	5	1537	55	8.7	5	0.12	2.89	2500	0.0047	7	-60.9	156.36		14.10	6.54	0.00	0.00
W STAIRWELL 4/23	8	59	11		55	8.7	5	0.12	2.89			8	34.8	159.00		31.44	9.64		
W STAIRWELL 4/23	9	52	4		55	8.7	5	0.12	2.89			9	-26.1	157.32		11.21	5.87		
W STAIRWELL 4/23	10	65	3		55	8.7	5	0.12	2.89			10	87.0	160.42		8.32	5.10		
W STAIRWELL 4/23	11	61	1		55	8.7	5	0.12	2.89			11	52.2	159.47		2.54	3.06		
W STAIRWELL 4/23	12	60	4		55	8.7	5	0.12	2.89			12	43.5	159.24		11.21	5.87		
W STAIRWELL 4/23	13	49	7		55	8.7	5	0.12	2.89			13	-52.2	156.60		19.88	7.71		
W STAIRWELL 4/23	14	62	3		55	8.7	5	0.12	2.89			14	60.9	159.71		8.32	5.10		
W STAIRWELL 4/23	15	58	3		55	8.7	5	0.12	2.89			15	26.1	158.76		8.32	5.10		
W STAIRWELL 4/23	16	56	1		55	8.7	5	0.12	2.89			16	8.7	158.28		2.54	3.06		
W STAIRWELL 4/23	17	67	1		55	8.7	5	0.12	2.89			17	104.4	160.89		2.54	3.06		

BUILDING 4059 CLASS II SURVEY UNIT 13 SIGN ANALYSIS
TOTAL BETA READINGS

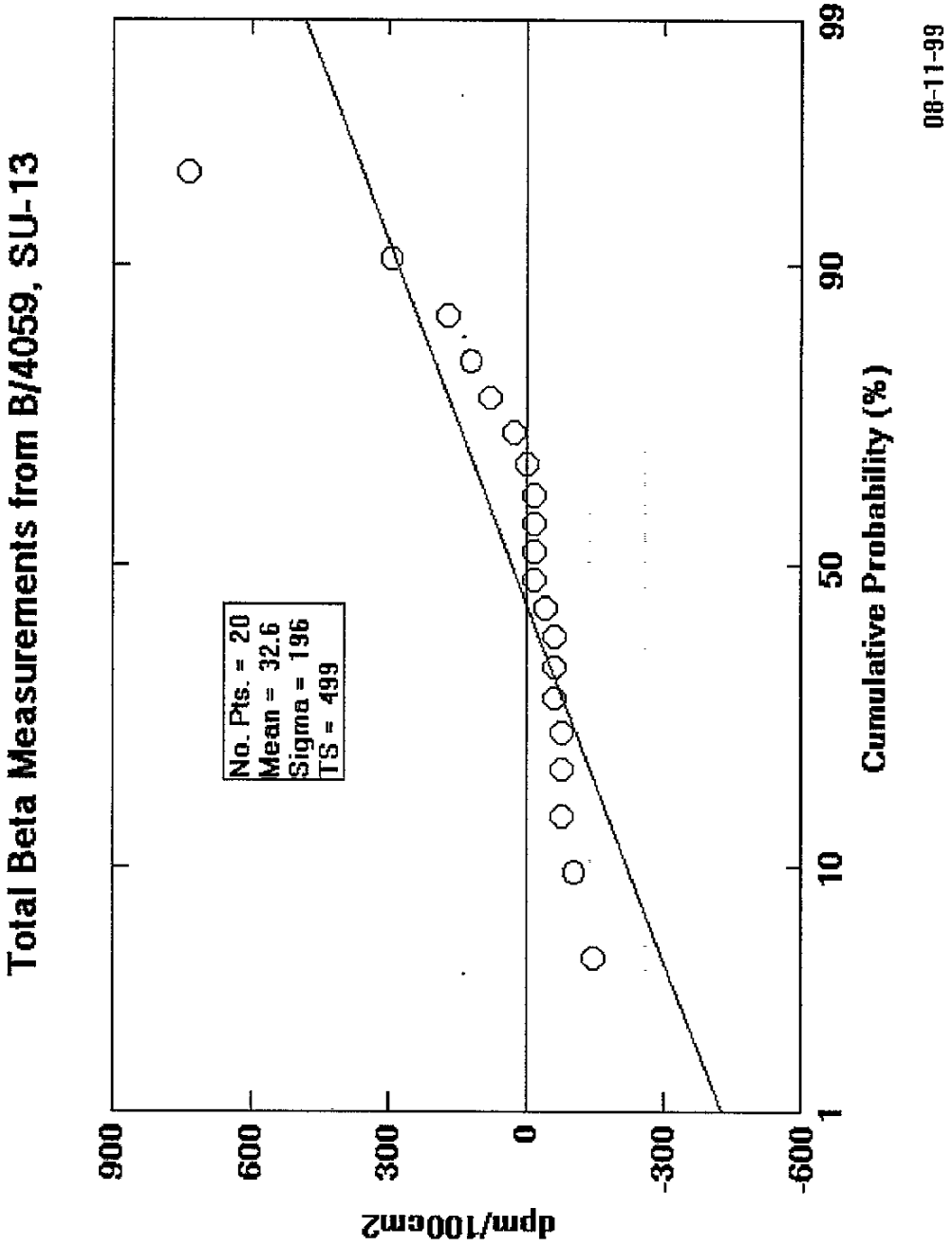
LOCATION	SAMPLE NUMBER	CORRECTED DATA	DCGLw – DATA dpm/100cm2 -	SIGN
AUX BLDG 4459	1	739	4260	1
AUX BLDG 4459	2	26	4973	1
AUX BLDG 4459	3	78	4921	1
AUX BLDG 4459	4	-104	5104	1
AUX BLDG 4459	5	-147	5147	1
AUX BLDG 4459	6	-60	5060	1
AUX BLDG 4459	7	0	5000	1
AUX BLDG 4459	8	295	4704	1
AUX BLDG 4459	9	-17	5017	1
AUX BLDG 4459	10	174	4826	1
AUX BLDG 4459	11	-60	5060	1
AUX BLDG 4459	12	-60	5060	1
AUX BLDG 4459	13	-17	5017	1
AUX BLDG 4459	14	-78	5078	1
AUX BLDG 4459	15	-78	5078	1
AUX BLDG 4459	16	-17	5017	1
AUX BLDG 4459	17	-78	5078	1
AUX BLDG 4459	18	-43	5043	1
AUX BLDG 4459	19	121	4878	1
AUX BLDG 4459	20	-17	5017	1

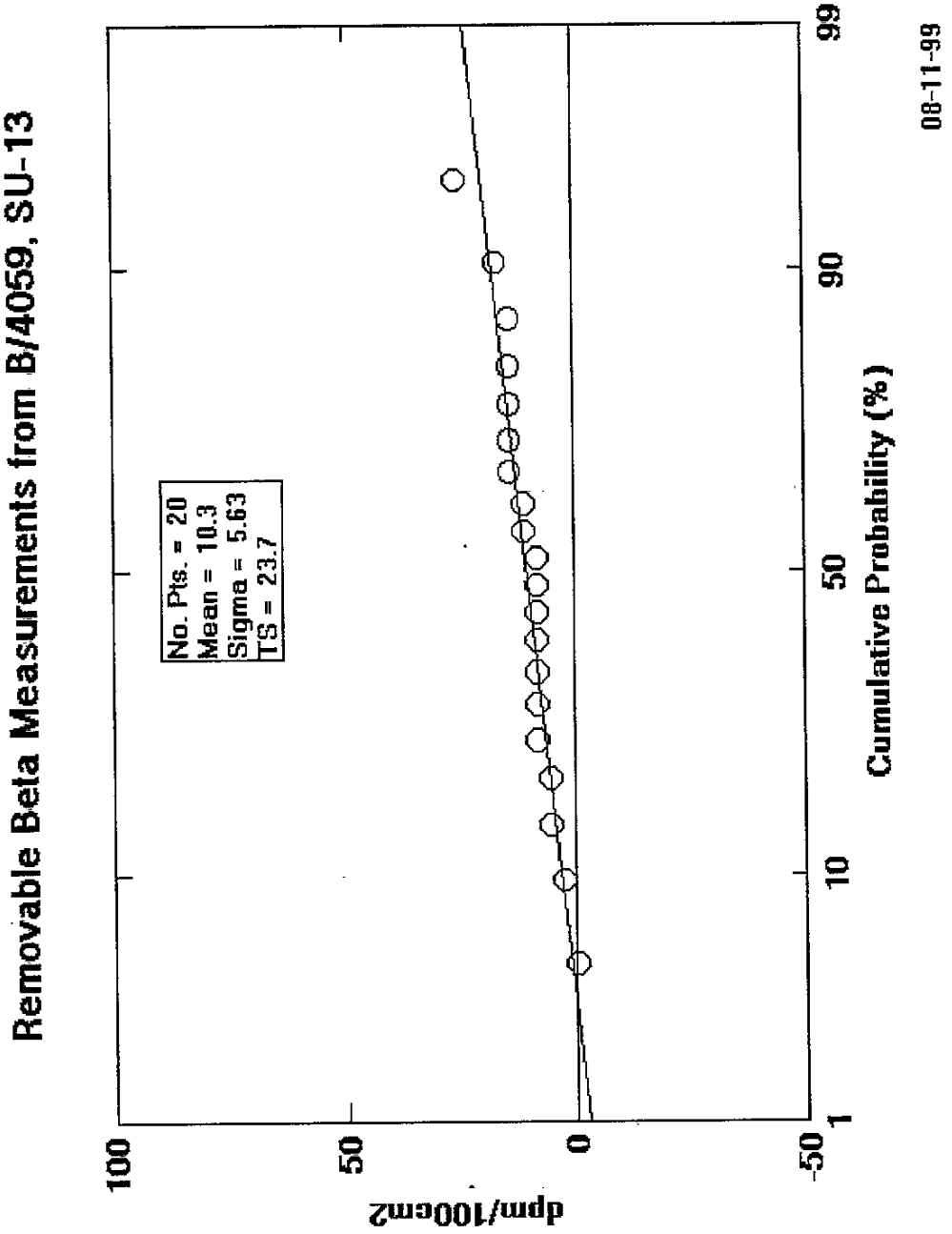
BUILDING 4059 CLASS II
SURVEY UNIT 13 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

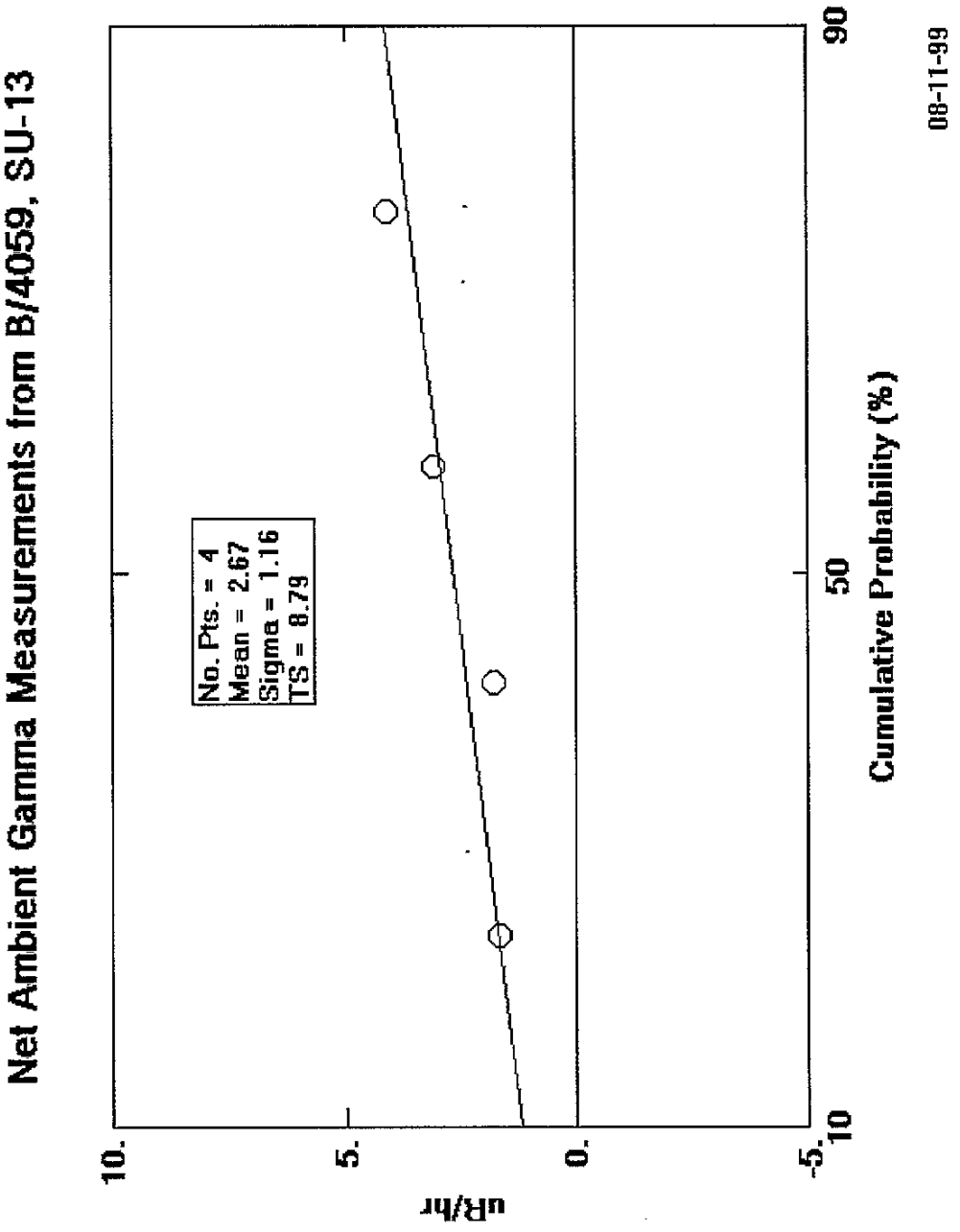
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
AUX BLDG 4459	1	11	988	1
AUX BLDG 4459	2	16	983	1
AUX BLDG 4459	3	14	985	1
AUX BLDG 4459	4	5	994	1
AUX BLDG 4459	5	14	985	1
AUX BLDG 4459	6	14	985	1
AUX BLDG 4459	7	14	985	1
AUX BLDG 4459	8	8	991	1
AUX BLDG 4459	9	8	991	1
AUX BLDG 4459	10	14	985	1
AUX BLDG 4459	11	2	997	1
AUX BLDG 4459	12	25	974	1
AUX BLDG 4459	13	8	991	1
AUX BLDG 4459	14	8	991	1
AUX BLDG 4459	15	8	991	1
AUX BLDG 4459	16	5	994	1
AUX BLDG 4459	17	8	991	1
AUX BLDG 4459	18	-0.3	1000	1
AUX BLDG 4459	19	8	991	1
AUX BLDG 4459	20	11	988	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS II SURVEY UNIT 13 SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (uR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
AUX BLDG 4459	1	4.1	0.8	1
AUX BLDG 4459	2	1.8	3.1	1
AUX BLDG 4459	3	1.6	3.3	1
AUX BLDG 4459	4	3.1	1.9	1
			TOTAL POSITIVES	4


Total Beta Measurements from B/4059, SU-13
No. Pts. = 20
Mean = 32.6
Sigma = 196
TS = 499
dpm/100cm2
900
600
300
0
-300
-600
Cumulative Probability (%)
1
10
50
90
99
08-11-99


Removable Beta Measurements from B/4059, SU-13
No. Pts. = 20
Mean = 10.3
Sigma = 5.63
TS = 23.7
dpm/100cm2
100
50
0
-50
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Net Ambient Gamma Measurements from B/4059, SU-13
No. Pts. = 4
Mean = 2.67
Sigma = 1.16
TS = 8.79
uR/hr
10.
5.
0.
-5.
10
50
90
Cumulative Probability (%)
08-11-99

APPENDIX D

CLASS III SURVEY RESULTS

BUILDING 4059 CLASS III
SURVEY UNIT 14 SIGN ANALYSIS
TOTAL BETA READINGS (dpm/100cm2)

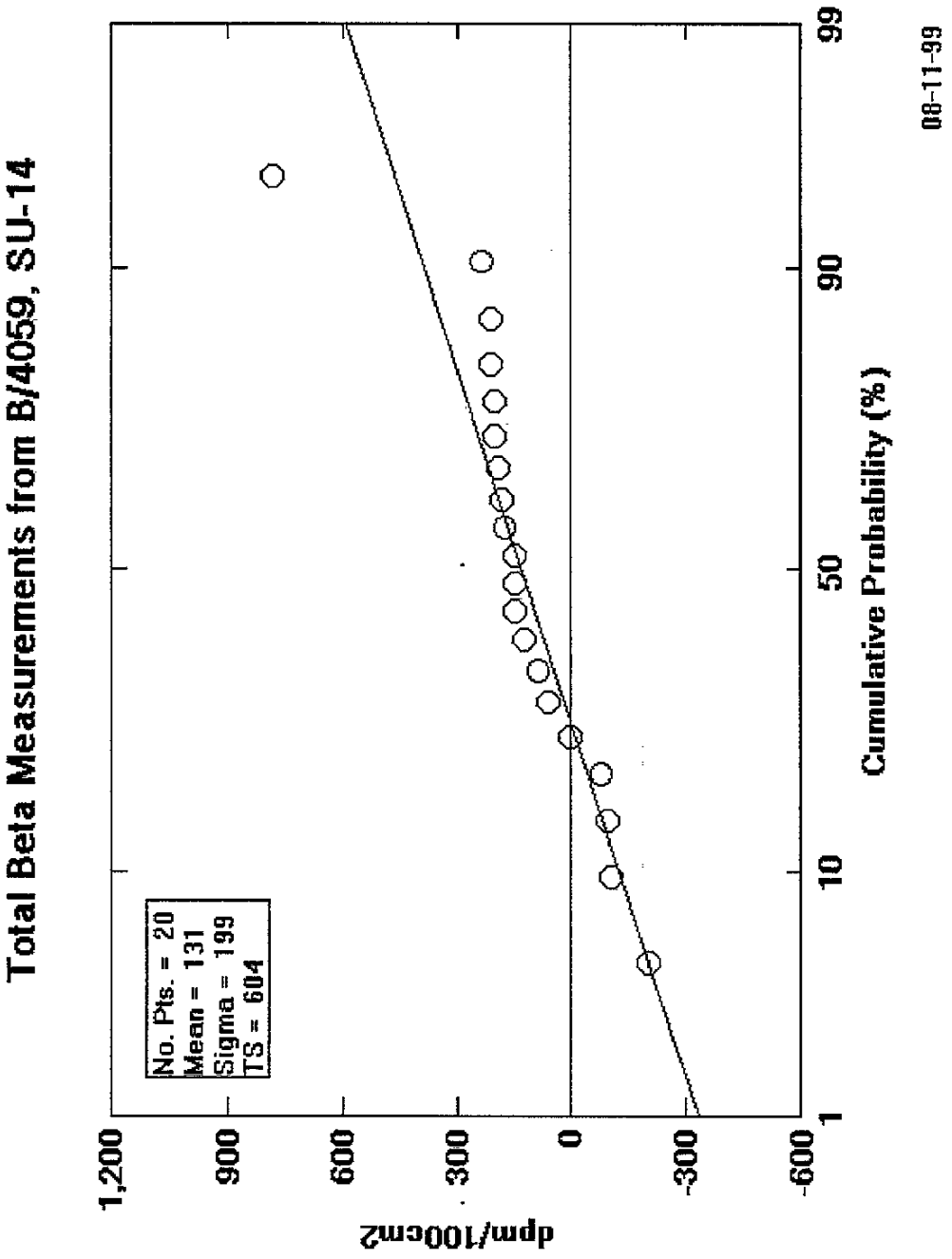
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
ALL OTHER AREAS	1	783	4217	1
ALL OTHER AREAS	2	174	4826	1
ALL OTHER AREAS	3	200	4799	1
ALL OTHER AREAS	4	234	4765	1
ALL OTHER AREAS	5	121	4878	1
ALL OTHER AREAS	6	191	4808	1
ALL OTHER AREAS	7	147	4852	1
ALL OTHER AREAS	8	60	4939	1
ALL OTHER AREAS	9	-78	5078	1
ALL OTHER AREAS	10	0	5000	1
ALL OTHER AREAS	11	87	4913	1
ALL OTHER AREAS	12	-95	5095	1
ALL OTHER AREAS	13	147	4852	1
ALL OTHER AREAS	14	208	4791	1
ALL OTHER AREAS	15	147	4852	1
ALL OTHER AREAS	16	208	4791	1
ALL OTHER AREAS	17	182	4817	1
ALL OTHER AREAS	18	200	4799	1
ALL OTHER AREAS	19	-104	5104	1
ALL OTHER AREAS	20	-200	5200	1
			TOTAL POSITIVES	20

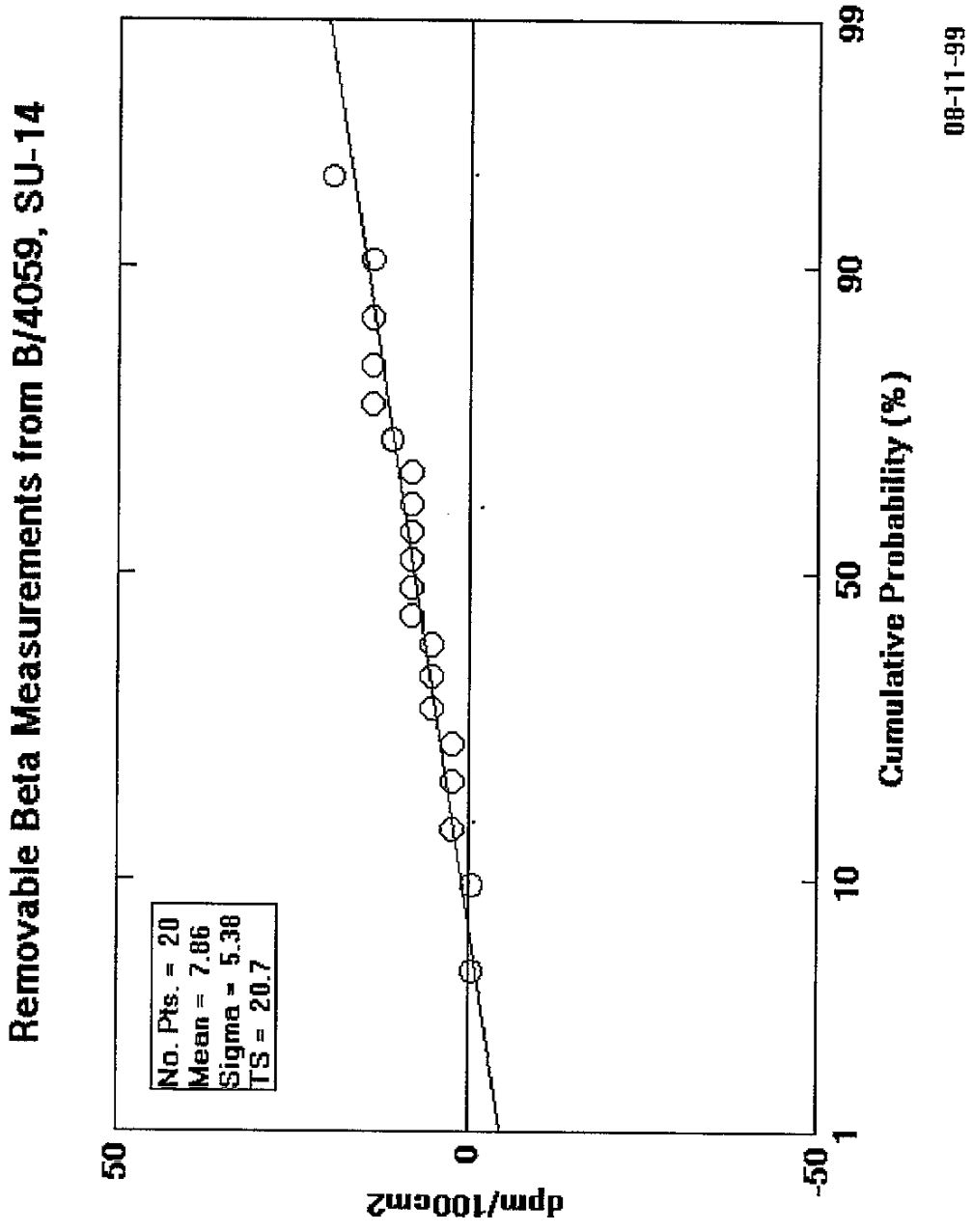
BUILDING 4059 CLASS III
SURVEY UNIT 14 SIGN ANALYSIS
REMOVABLE BETA READINGS (dpm/100cm2)

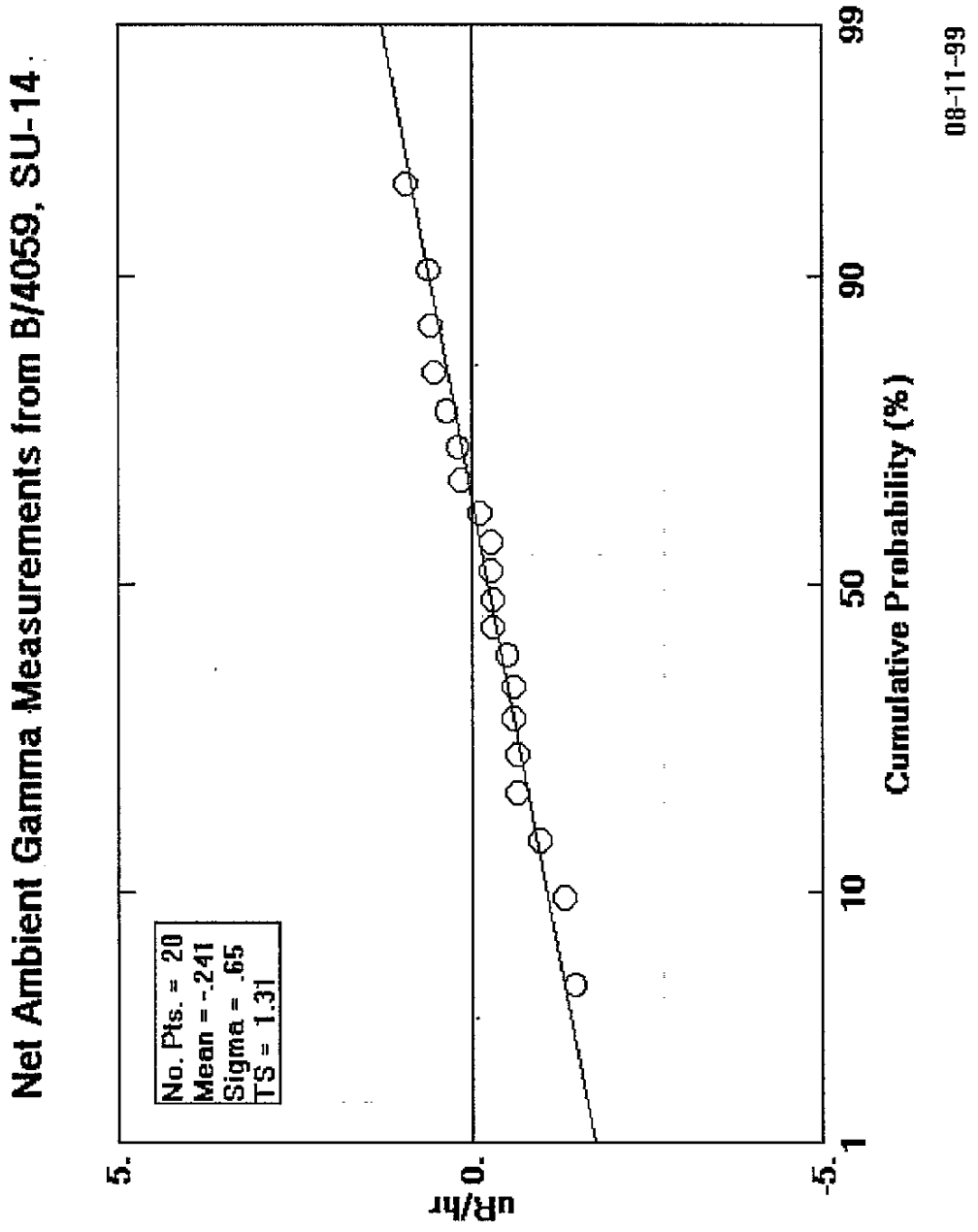
LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
ALL OTHER AREAS	1	2	997	1
ALL OTHER AREAS	2	-0.5	1000	1
ALL OTHER AREAS	3	8	991	1
ALL OTHER AREAS	4	2	997	1
ALL OTHER AREAS	5	-0.5	1000	1
ALL OTHER AREAS	6	13	986	1
ALL OTHER AREAS	7	8	991	1
ALL OTHER AREAS	8	19	980	1
ALL OTHER AREAS	9	5	994	1
ALL OTHER AREAS	10	8	991	1
ALL OTHER AREAS	11	2	997	1
ALL OTHER AREAS	12	13	986	1
ALL OTHER AREAS	13	13	986	1
ALL OTHER AREAS	14	5	994	1
ALL OTHER AREAS	15	13	986	1
ALL OTHER AREAS	16	8	991	1
ALL OTHER AREAS	17	5	994	1
ALL OTHER AREAS	18	8	991	1
ALL OTHER AREAS	19	8	991	1
ALL OTHER AREAS	20	11	988	1
			TOTAL POSITIVES	20

BUILDING 4059 CLASS III
SURVEY UNIT 14 SIGN ANALYSIS
NET AMBIENT GAMMA READINGS (μR/hr)

LOCATION	SAMPLE NUMBER	DATA	DCGLw – DATA	SIGN
ALL OTHER AREAS	1	0.1	4.8	1
ALL OTHER AREAS	2	0.9	4.0	1
ALL OTHER AREAS	3	-0.3	5.3	1
ALL OTHER AREAS	4	-0.2	5.2	1
ALL OTHER AREAS	5	0.5	4.4	1
ALL OTHER AREAS	6	0.6	4.3	1
ALL OTHER AREAS	7	-0.6	5.6	1
ALL OTHER AREAS	8	-0.6	5.6	1
ALL OTHER AREAS	9	-1.3	6.3	1
ALL OTHER AREAS	10	0.5	4.4	1
ALL OTHER AREAS	11	-0.6	5.6	1
ALL OTHER AREAS	12	-0.2	5.2	1
ALL OTHER AREAS	13	-0.5	5.5	1
ALL OTHER AREAS	14	-0.1	5.1	1
ALL OTHER AREAS	15	-0.6	5.6	1
ALL OTHER AREAS	16	0.3	4.6	1
ALL OTHER AREAS	17	0.1	4.8	1
ALL OTHER AREAS	18	-0.9	5.9	1
ALL OTHER AREAS	19	-0.3	5.3	1
ALL OTHER AREAS	20	-1.4	6.4	1
			TOTAL POSITIVES	20


Total Beta Measurements from B/4059, SU-14
No. Pts. = 20
Mean = 131
Sigma = 199
TS = 604
dpm/100cm2
1,200
900
600
300
0
-300
-600
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Removable Beta Measurements from B/4059, SU-14
No. Pts. = 20
Mean = 7.86
Sigma = 5.38
TS = 20.7
dpm/100cm2
50
0
-50
1
10
50
90
99
Cumulative Probability (%)
08-11-99


Net Ambient Gamma Measurements from B/4059, SU-14
No. Pts. = 20
Mean = -.241
Sigma = .65
TS = 1.31
uR/hr
5.
0.
-5.
1
10
50
90
99
Cumulative Probability (%)
08-11-99

B/4059 SU14
CLASS III
ALL OTHER AREAS

SAMPLE AREA	GRID NO.	1 MIN TOTAL	1 MIN REM	1 MIN GAM TOTAL	BETA INSTRUMENT BACKG	BETA INSTRUMENT EFACT	BETA INSTRUMENT AFACT	BETA SMEAR BACKG	BETA SMEAR EFACT	GAMMA BACKG	GAMMA EFACT	GRID NO.	BETA (DPM/100CM2) TOTAL	BETA (DPM/100CM2) STD DEV	BETA (DPM/100CM2) STD DE	BETA (DPM/100CM2) REM	BETA (DPM/100CM2) STD DEV	GAMMA (uR/hr) TOTAL	GAMMA (uR/hr) STD DEV
ALL OTHER AREAS	1	76	1	2001	58	8.7	5	0.18	2.89	1960	0.005	1	783.0	503.55		2.37	3.14	0.19	0.29
ALL OTHER AREAS	2	74	0	2161	54	8.7	5	0.18	2.89	1960	0.005	2	174.0	161.36		-0.52	1.23	0.93	0.30
ALL OTHER AREAS	3	77	3	1891	54	8.7	5	0.18	2.89	1960	0.005	3	200.1	162.06		8.15	5.15	-0.32	0.29
ALL OTHER AREAS	4	81	1	1897	54	8.7	5	0.18	2.89	1960	0.005	4	234.9	162.99		2.37	3.14	-0.29	0.29
ALL OTHER AREAS	5	68	0	2083	54	8.7	5	0.18	2.89	1960	0.005	5	121.8	159.95		-0.52	1.23	0.57	0.30
ALL OTHER AREAS	6	76	5	2092	54	8.7	5	0.18	2.89	1960	0.005	6	191.4	161.83		13.93	6.58	0.61	0.30
ALL OTHER AREAS	7	71	3	1849	54	8.7	5	0.18	2.89	1960	0.005	7	147.9	160.66		8.15	5.15	-0.65	0.29
ALL OTHER AREAS	8	61	7	1820	54	8.7	5	0.18	2.89	1960	0.005	8	60.9	158.28		19.71	7.74	-0.65	0.29
ALL OTHER AREAS	9	45	2	1672	54	8.7	5	0.18	2.89	1960	0.005	9	-78.3	154.41		5.26	4.27	-1.34	0.28
ALL OTHER AREAS	10	54	3	2071	54	8.7	5	0.18	2.89	1960	0.005	10	0.0	156.60		8.15	5.15	0.52	0.30
ALL OTHER AREAS	11	64	1	1829	54	8.7	5	0.18	2.89	1960	0.005	11	87.0	159.00		2.37	3.14	-0.61	0.29
ALL OTHER AREAS	12	43	5	1898	54	8.7	5	0.18	2.89	1960	0.005	12	-95.7	153.92		13.93	6.58	-0.29	0.29
ALL OTHER AREAS	13	71	5	1851	54	8.7	5	0.18	2.89	1960	0.005	13	147.9	160.66		13.93	6.58	-0.51	0.29
ALL OTHER AREAS	14	78	2	1937	54	8.7	5	0.18	2.89	1960	0.005	14	208.8	162.30		5.26	4.27	-0.11	0.29
ALL OTHER AREAS	15	71	5	1828	54	8.7	5	0.18	2.89	1960	0.005	15	147.9	160.66		13.93	6.58	-0.61	0.29
ALL OTHER AREAS	16	78	3	2036	54	8.7	5	0.18	2.89	1960	0.005	16	208.8	162.30		8.15	5.15	0.35	0.29
ALL OTHER AREAS	17	75	2	1995	54	8.7	5	0.18	2.89	1960	0.005	17	182.7	161.60		5.26	4.27	0.16	0.29
ALL OTHER AREAS	18	77	3	1749	54	8.7	5	0.18	2.89	1960	0.005	18	200.1	162.06		8.15	5.15	-0.98	0.28
ALL OTHER AREAS	19	42	3	1894	54	8.7	5	0.18	2.89	1960	0.005	19	-104.4	153.67		8.15	5.15	-0.31	0.29
ALL OTHER AREAS	20	31	4	1642	54	8.7	5	0.18	2.89	1960	0.005	20	-200.1	150.94		11.04	5.91	-1.48	0.28
4/15/16																			